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ABSTRACT

A comprehensive program for elementary and secondary health education is presented. The program is structured to promote affective as well as cognitive learning and centers on (1) understanding the human body and learning how to care for it, (2) understanding what it means to be man or woman, and (3) understanding the forces in the physical and social environment that influence behavior. Thus, sex education and mental hygiene are included as "normal" parts of the health program. The term "health and sex education" is used in reference to the program only to emphasize that sex education is not excluded or minimized. There are three basic parts to the program, corresponding roughly to the three educational stages: primary, intermediate, and secondary. Part I is for kindergarten and grades 1 through 4 and is designed to be taught by the self-contained classroom teacher who may use each lesson in connection with appropriate classroom activities. Teaching the program should require no extra time and no changes in scheduling or staff assignments. Part II for grades 5 through 8 follows the departmentalized approach and is designed to be integrated with existing programs in language arts, physical education, science, and social studies. (The distribution of lessons among these four subjects is presented.) The high school program (Part III) is presented as an independent course of study to be taught by specialized health educators. It is written in textbook, rather than teaching manual format, allowing the teacher to decide on methodology and form of presentation. Certain recommendations are included in the preface of the document to enable teachers to use the program effectively. (JH)

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TITLE III

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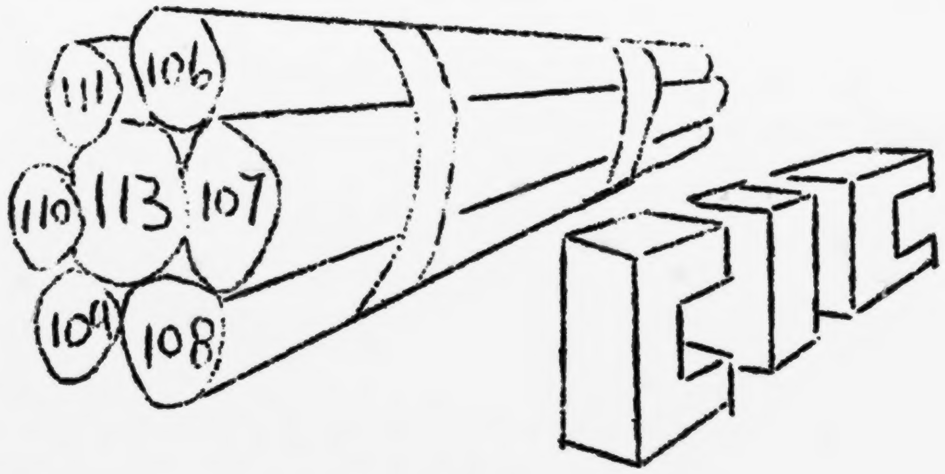
A TEACHING PROGRAM IN HEALTH AND SEX EDUCATION

Sponsored by the Committee for Interdistrict Cooperation



TITLE III
Elementary and Secondary Education Act

Nathir G. Sara
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PREFACE

This program is divided into three basic parts which correspond roughly to the three educational stages: primary, intermediate, and secondary. There is some variation in the plan for each part, but continuity is observed throughout the program. The reason for the variation in the design of each level lies in the nature of school organization at the primary, intermediate, and secondary levels.

Part I is a teaching program for kindergarten and grades one through four. The usual setting at this level is known as the self-contained classroom. A home room teacher is assigned the task of teaching the three R's and other subjects. As a result, we have designed this part of the program to be taught by the self-contained classroom teacher who may use each lesson in connection with appropriate classroom activities. No extra time would be needed and no changes in scheduling or staff assignment would be necessary.

The second part of the program (Part II) is designed for grades five through eight. Most schools follow the departmentalized approach in their organization at this level. Since this instructional program is most relevant to curriculum content in certain subjects, the lessons presented in this part have been designed for use by teachers of language arts, physical education, science and social studies. An index showing the distribution of lessons in this part among these four subjects is presented as an appendix to this volume.

The reason for using this plan in designing the first two parts of the program lies in the nature of the subject itself. Health education is a combination of various fields of knowledge. Science classes help the student learn about his body; physical education programs teach him discipline and the value of physical fitness; social studies classes are involved in studying society; and language arts classes provide opportunities to explore the meaning of values and the analysis of behavior. It is evident that lessons in health and sex education be integrated with existing programs in the above subjects.

The plan for the high school program is somewhat different. Because of the complexity of organization in most high schools, the committee has written the program as an independent course of study to be taught by specialized health educators. As a result, the authors have departed from the format described above. This section of the program is written as a textbook, rather than a teaching manual, which provides a specific description of the content and allows teachers to decide on methodology and form of presentation. The essay approach employed in this section has enabled the authors to set the mood for the course as well as describe its content.

In order to enable elementary and secondary school teachers to use this program effectively, the committee has made the following recommendations:

1. In-service education: While in-service education of teachers is essential to the success of any new program, it is especially important in the area of health and sex education. Teachers should understand the

objectives of this program as well as its philosophical foundations before they can appreciate its content. After a thorough study of the total program, teachers are urged to assess their talents and limitations so they may be able to accept the responsibility of teaching it, or abstain from doing so. As we will explain in our introductory statement, the program deals with the affective as well as the cognitive dimensions of learning. If teachers could not deal with sex education openly and objectively, they would create similar attitudes in their students.

2. Community support is a prerequisite to the success of this program. Schools are urged to inform their communities of the goals and content of this program. Parent-teacher organizations, the press, and school newsletters are effective tools of communication with parents and other interested citizens.

3. The recommendations of the Illinois Sex Education Advisory Board have been observed by the authors of this program. The Policy Statement on Family Life and Sex Education issued by that board and published by the Office of Superintendent of Public Instruction must be read and understood by teachers involved in this program.

4. The question of providing sex education in coeducational or separate classes has been examined by the committee. While leading authorities on sex education do not agree on this issue, it is our recommendation that a combination of both approaches be utilized:

   a. Primary grades: Coeducational classes.

   b. Grades 5 - 8: Coeducational classes except for lessons dealing with the reproductive system. (Physical education classes provide a natural setting for separating the sexes.)

   c. High school: Separate classes so that students may feel more at ease discussing the subject. However, high schools are urged to schedule health classes for boys and girls to allow for mixed sessions and team teaching whenever possible and desirable.

5. Reference materials and instructional aids listed in this program have been identified and selected by the committee. The schools are urged to make such materials, as may be necessary, available for teachers. School librarians are requested to assist teachers in identifying additional materials that are consistent with the objectives and content of this program.

6. Parent consent may be crucial to the success of this program. We recommend that children's participation in this program be dependent upon approval by their parents. This policy may be adopted only during the first two years of implementation.

7. Birth control as a subject of discussion has not been dealt with in this program with the exception of a few casual references. The committee encourages teachers to answer students' questions on this subject briefly and openly, but teachers should abstain from providing specific instructions on birth control techniques. If confronted with questions of this nature, the teacher may encourage the student to discuss such matters with his parents or family physician.

8. Evaluation tests are provided as appendices to this program. They have been prepared to help schools measure the effectiveness of the program. Teachers are encouraged to use these tests and report test scores to C.I.C. office according to the procedures accompanying the tests.

INTRODUCTION

Health is a state of well-being. It enables the individual to lead a satisfying and useful life relatively free from physical and psychological pain. With this in mind, an individual's health is determined by his physical, mental, and social fitness. This concept of health is a relative rather than an absolute measure. In other words, taking the composite health condition of an individual, it is not possible to say he is 90 percent healthy. All that can be determined is that some individuals enjoy better health then others: that some are more physically fit, some enjoy excellent social relations, and some have resolved their personal conflicts in an acceptable manner.

Health education, therefore, aims at enhancing the physical, mental, and emotional well-being of the individual and society. Its goal is to enhance a way of life that promotes, to the highest degree possible, one's excellence as a physical, psychological, and social being. This means that sex education and mental hygiene should be normal parts of a complete health education program. However, since most health education programs generally are lacking in the area of sex education, it is necessary that the term "health and sex education" be used to emphasize that sex education has not been excluded or minimized. This will be needed for only a few years until educators and the general public acquire the correct meaning of "health education."

Objectives of Health and Sex Education

The main objective of any health and sex education program is to enhance the physical, mental, and emotional well-being of the individual and society. This goal can be achieved through a program of learning centered on: (a) understanding the human body and learning how to care for it, (b) understanding what it means to be man or woman, and (c) understanding the forces in the physical and social environment that influence behavior.

These objectives can be achieved only if the program is designed to promote affective as well as cognitive learning. Positive attitudes and habits of healthful living are no less important than cognitive acquisition of facts and principles. Sometimes attitudes are more important than facts: a man may know a great deal about nutrition while continuing his poor diet. Another example is the case of the person who knows about the harmful effects of tobacco but rationalizes his smoking habit by suggesting that life bears potentials of many hazards that are equally threatening.

The above objectives represent the three properties that have been included in our definition of health education. It is obvious that the first objective is relatively easy to achieve since much information on this subject is available for teachers and curriculum workers. Thousands of publications have dealt with physical health and the subject is not new to educators. The remaining objectives and means of achieving them command most of our attention.

The second objective concerns itself with understanding human sexuality. The program is based on a rather simple approach: to present an analysis of the biology of sex, and to explain the personal and social dimensions of sexual behavior. The implied observation here is that sex education is partially a study of the human body and partially a study of behavior.*

Since mental and social well-being depends largely on behavior of the individual in his interaction with society, it is important that the program provide learning experiences toward this end. In order to help the child understand behavior we should help him understand the forces that operate in his social environment. He should study not only what people do, but also why they do what they do. Thus it is extremely important that we structure learning experiences designed to help children understand the causes of behavior.**

Health and Sex Education in the School

Schools have generally provided health education and shied away from sex education. Formal health instruction in the school has traditionally been defended on the grounds that preventive medicine is basically an educational concern. Education is considered a basic preventive measure against disease, and the school is the agency responsible for education.

It is understandable that schools have excluded sex education from their programs since the school is only a reflection of the society it serves, and the American society generally avoided a formal recognition of sex. While formal sex education was not provided in the school, it is only natural to assume that much information about sex was passed on from one generation to another through various channels. One of the most direct channels of communication was the parental disclosure of the "facts of life" often described in naive terms making man a physiological being similar in his reproductive behavior to plants or animals.

Another source that has traditionally provided sex information is the peer group. With his peers the child is free from adult supervision and dominance and the situation eventually leads to a discussion where the more "experienced" members of the group give the others the advantage of their "experience." Sex educators today recognize that such experiences often provide misinformation and extremely confuse young people as they try to understand and cope with the problems they face.

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* According to Wallace Fulton, sex education means "training people emotionally and intellectually to be able to make intelligent and well-informed choices among the array of competing alternatives." SIECUS Newsletter, Vol. I, February, 1965, No. 1.

**Based on the causal approach to the study of behavior as described by Ralph H. Ojemann, Alice S. Hawkins, and Katherine Chawning, in their series A Teaching Program in Human Behavior and Mental Health, Books I - IV, Cleveland, Ohio: The Educational Research Council of America, 1967.

Less direct channels of communication are numerous. The child gradually grows to sense the attitudes his parents have about sex. He also acquires an attitude mostly similar to their's and much influenced by society at large. Eventually the child learns to respond to his body and to various stimuli in his environment in a manner generally acceptable by his parents and his society. While he recognizes that much curiosity leads to punishment he eventually discovers new freedom with his peers, and learns how to satisfy his curiosity without violating social taboos.

Cultural influences are by no means minimized here. The list of institutions that influence the child's attitude toward sex is indeed long. Directly and indirectly the complex of individuals and groups we call society dictates a mode of behavior deemed desirable and suggests how and when exceptions are accepted. In static societies when change is slow, children may easily be inculcated into the culture mostly through indirect means of education. In dynamic, rapidly changing societies, the picture is different.

Profound social changes generally associated with modern industrialized societies result in changing relationships among individuals. During the last two decades the American society has become highly mobile and affluent. Individuals enjoy more autonomy than ever before, and new attitudes about sex, morality, and the family have developed. In the center of all this change the individual finds it more difficult to relate to others and to society in a meaningful manner. In essence, the problem embodies freedom of choice enhanced by personal autonomy and compounded with conflicting social values and uncertain modes of behavior.

Other factors have further complicated the problem. In the past men and women had very definite and very distinct social roles sanctioned by society. Today there is more uncertainty regarding roles of males and females, and the distinction is being reduced to a great extent by political and occupational influences. Furthermore, society at large is reexamining its values, and various groups are attempting to develop a new code of ethics that is more meaningful and more honest.

From the above, it is evident that the school can no longer ignore sex education. It should join the home, church, and other educational institutions in providing sex education. It is essential that parents, educators and clergy recognize the complexity of this partnership and develop a program based on scientific knowledge and universal moral values. A basic prerequisite for this partnership is that sex education be understood in a consistent manner by all involved, and that the subject be treated with openness and objectivity.

The Question of Ethics

A program of learning that deals with human sexuality and attempts to examine interpersonal relations among men and women cannot in any way avoid the question of morality. This is so because morality as a system of ethics is not divorced from sexuality. Rather, conventional morality has attached great significance to sexual behavior. Any discussion of human sexual behavior, therefore, will entail, or at least imply, moral judgment of one kind or another.

The real question, however, is not whether or not to deal with moral issues in an educational program. The real question is that of establishing an approach to moral judgment that can be accepted by the community and is effective in educating children. The problem that is implied here has been identified by several authorities in sex education: the school is generally expected to reinforce conventional morality which is not always relevant to the reality of a rapidly changing society and an increasingly independent teen-culture. Furthermore, there is the danger of causing students to "tune out" and segments of the community to oppose the program if teachers assume a formal judgmental role.

It is understood that morality as a code of ethics cannot be static in a changing society. With social change relationships among people change, and new roles have to be established because old ones no longer suffice. The youth of today enjoy more freedom, more independence and more autonomy than any other generation in recorded history. To a large number of them the threats of pregnancy and venereal disease have been minimized. Contemporary theology in many denominations is less rigid and clearly less punitive than that of the past.

In addition young people today are increasingly less directed by parental control and more closely influenced by their peers. When adult control is minimized, the child becomes more independent. He has to make decisions that may be of great significance. Some such decisions concern sexual behavior, others do not, but nearly all entail moral consequences. Stated very briefly, in today's culture, and probably more so in tomorrow's, it is the individual who will make decisions, rather independently, on how to care for his health, manage his sexuality, and interact with other people.

The school, therefore, must provide the knowledge and wisdom needed for intelligent and responsible behavior. This means that the school must provide health information as well as help the student develop a code of ethics to guide behavior. In order to arrive at an acceptable and effective approach to morality, the following observations are presented:

1. The school is charged with the task of cultural inculcation so that the values and knowledge of our generation may be passed on to another generation. Certainly education should not, indeed could not, violate the basic values of the society it serves. Only those values that society abandons can disappear from the educational program.

2. In our society there is no single view regarding the purpose, role, and standards of human sexuality. There are many views represented by various groups and individuals, and our society seems to have departed from absolutism in moral judgment.

3. Ethically, sexual behavior should be judged by criteria consistent with those underlying any other type of behavior. Basic values of honesty, integrity, and respect for others cannot be abandoned if our society is to survive.

The above considerations lead to a position on morality that the school can adopt and support. This position acknowledges basic values in our culture and accepts the premise that norms vary from time to time and from people to people. However, the fact that moral relativism is acknowledged does not mean that norms are not required. As a social being, every individual must respect the demands of his society in his total behavior whether that be sexual or non-sexual.

How can this position be presented in health and sex education classes? The answer is rather simple. Certainly our goal is behavioral rather than simply cognitive. The student acquires information on the physiological aspect of sexuality and learns to identify the forces that are basically physical. He also acquires information on his society, its basic values and its demands. Using the causal approach described earlier, the student learns to identify the forces that operate in his social environment. He learns to analyze his behavior and the behavior of others and to understand the causes underlying various patterns of behavior.

Furthermore, through repeated educational experiences the student learns to consider the consequences of his behavior and to evaluate them. Certainly the educational program has to provide sufficient information to enable the student to foresee the consequences of his behavior and to evaluate those consequences in terms of effects on his physical, mental, and social well-being as well as the health of others.

This approach requires that teachers maintain professional objectivity and abstain from presenting personal moral judgment. The role of the teacher is to stimulate thinking and to guide the learner as he attempts to analyze his behavior or to predict and evaluate consequences of one's actions. The teacher should also abstain from answering such questions as, "If you were in this situation, what would you do?" Instead he should present the situation to the class to help students identify the possible alternatives and examine the foreseeable consequences for every alternative.

In conclusion, the school can be instrumental in providing a meaningful health and sex education program that can enjoy the support of the community and meet the needs of the youth. The program can truly train the student to make well-informed and intelligent decisions for which he is responsible. Without such training most youngsters will be unprepared to cope with their sexuality or with the other forces ever present in their daily interaction with other people and new situations.

NATHIR G. SARA, Ph.D.
Project Director

A TEACHING PROGRAM IN
HEALTH AND SEX EDUCATION

PART I

KINDERGARTEN THROUGH GRADE FOUR

UNIT ONE

THE FAMILY AND THE INDIVIDUAL

Introduction

The family is the smallest and most basic social institution. It does not only provide for the child's physical needs, but also his first social environment in which he learns to live with other people and assimilates cultural values. It is within this social unit that the human virtues of love, concern, and responsibility are developed.

This unit is composed of six lessons each of which deals with one basic concept. The following table is to help teachers determine the significance of each lesson in terms of its relevance to each grade level. The sign "X" marks the recommended time for introducing the concept, while "E" indicates need for full coverage and emphasis.

		GRADES				
LESSON	TITLE	K	1	2	3	4
One	Meaning of the Family	X	X	E		
Two	Structure of the Family	X	X	E		
Three	Responsibilities of Family Members	X	X	X	X	X
Four	The Child's Role in the Cycle of Family		X	X	X	X
Five	Need for Respect of Self, for Family, and for Community		X	E	E	E
Six	The Rules and Values Governing Children, Adults, Families, and Society at Large		X	E	E	E

LESSON ONE

MEANING OF THE FAMILY

Concept: A family consists of related individuals who love and take care of each other.

A. Content

1. There are reasons why a family exists.
    - a. Parents' love for each other.
    - b. Parents' love for their children.
2. The family consists of several relationships.
    - a. Parents with each other
    - b. Mother and child
    - c. Father and child
    - d. Brothers and sisters
3. Family members have many feelings.
    - a. Happy
    - b. Sad
    - c. Anger
    - d. Fear
    - e. Hopefulness
    - f. Love
    - g. Loyalty
    - h. Empathy
    - i. Sympathy
4. Basic love (caring for others) helps us understand each other.
5. Children learn to love as they are loved.

B. Vocabulary

Relationships
Love
Loyalty
Sympathy
Empathy (is a feeling for others)

C. Introductory Discussion

1. What is a family?
2. What are families like?
3. What kinds of things do families do together?

D. Activities

1. Art: Each child draws a picture of his family.

2. Acting out open-end stories - family feelings - examples:

   a. One morning Jeff decided to fix his own breakfast. He went in the kitchen and accidently spilled juice in the refrigerator and on the floor. He then broke the cereal bowl and spilled the sugar. Suddenly he heard mother coming. What do you think happened?

   b. Sally and Jane were sisters. Sally was ten years old and Jane was five. One night, Sally wanted to watch a special TV show. Mother gave her special permission to stay up until 9 o'clock as it was a school night. Jane wanted to watch the TV show too, but mother said, "No, you are too young to stay up that late." Jane said, "It isn't fair. Sally always gets to do things I can't do. She always gets to stay up later even if there isn't a special reason."

      Finish the story.

   c. Read and discuss:

      1. "Bruno's Treasure" from: A Teaching Program in Human Behavior and Mental Health.

      2. "My Brother," "Riding," and "Everybody Says" from: All Together.

E. Resources

For Teachers:

1. Aldis, Dorothy. All Together. New York, N. Y.: G. P. Putnam & Sons, 1952.

2. Arbuthnot, May Hill. Time for Poetry. Glenview, Illinois: Scott, Foresman & Co., 1951.

3. Ferris, Helen. Favorite Poems Old and New. Garden City, N. Y.: Doubleday & Co., 1957, p. 102.

4. Ojemann, Ralph H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health, Book I, Iowa City, Iowa: State University of Iowa, 1962.

For Students:

1. Guilfoile, Elizabeth. Have You Seen My Brother? Chicago, Illinois: Follett Publishing Co., 1962.

2. Lemski, Lois. Papa Small. New York: Walck, 1963.

3. Schleim, Miram. *My Family*. New York: Abelard and Schuman, 1960.
4. Stover, Jo Ann. *I Am In a Family*. New York: David McKay, Inc., 1966.

LESSON TWO

STRUCTURE OF THE FAMILY

Concept: There are many different kinds of families.

A. Content

1. A typical family is composed of mother, father, children.
2. Some family units are different.
   - a. One parent families.
   - b. Families in which persons of several generations live in the same family unit.
   - c. Families in which children live with someone other than either or both of their parents, i.e., foster parents, aunt, grandparents.
   - d. Families in which there are no children.
   - e. Other household residents:
     - (1) Foster children
     - (2) Step-children
     - (3) Maid, baby sitter, housekeeper
     - (4) Foreign student
3. Family composition may change from time to time.
   - a. separation
   - b. death
   - c. divorce
   - d. responsibility to either parents, family, i.e., one grandparent dies, leaving single grandparent to live with family or cousins, etc.
   - e. arrival of new baby

B. Vocabulary

separation
widow
widower
divorce
adoption
foster child
stepchild
respect
foreign
brother-in-law
foster-parent
appreciation

In explaining the above terms, the teacher should convey an attitude as well as a meaning. For example:

divorce - The husband and wife have found it hard to live and work together happily. They are sad about this but decide it would be best to stop being married. The children belong to them and they will always be their children's mother and father. Both continue to love their children and take care of them.

respect - when you respect someone, you are thoughtful of them and their feelings.

appreciation - when we learn to appreciate something, we learn to like and understand it; we learn why others like and understand it, too.

C. Introductory Discussion

1. Who lives at your house?

2. How do our families differ?

3. How can we show respect for other families?

D. Activities

1. Make scrapbooks showing different types of families.

2. Make scrap books stressing size and ages of family members.

3. Draw or paint pictures of pupils' homes - display pictures under two headings - "Many Kinds of Families" and "Many Kinds of Homes."

4. Draw pictures showing good times with grandparents.

5. Children may ask grandparents to tell stories about things they did when they were small.

6. If situation warrants, discuss divorce.

7. Act out ways of being kind to older people.

8. Show pictures illustrating mother as head of family to spark discussion on when this occurs.

9. Use picture showing different family groupings.

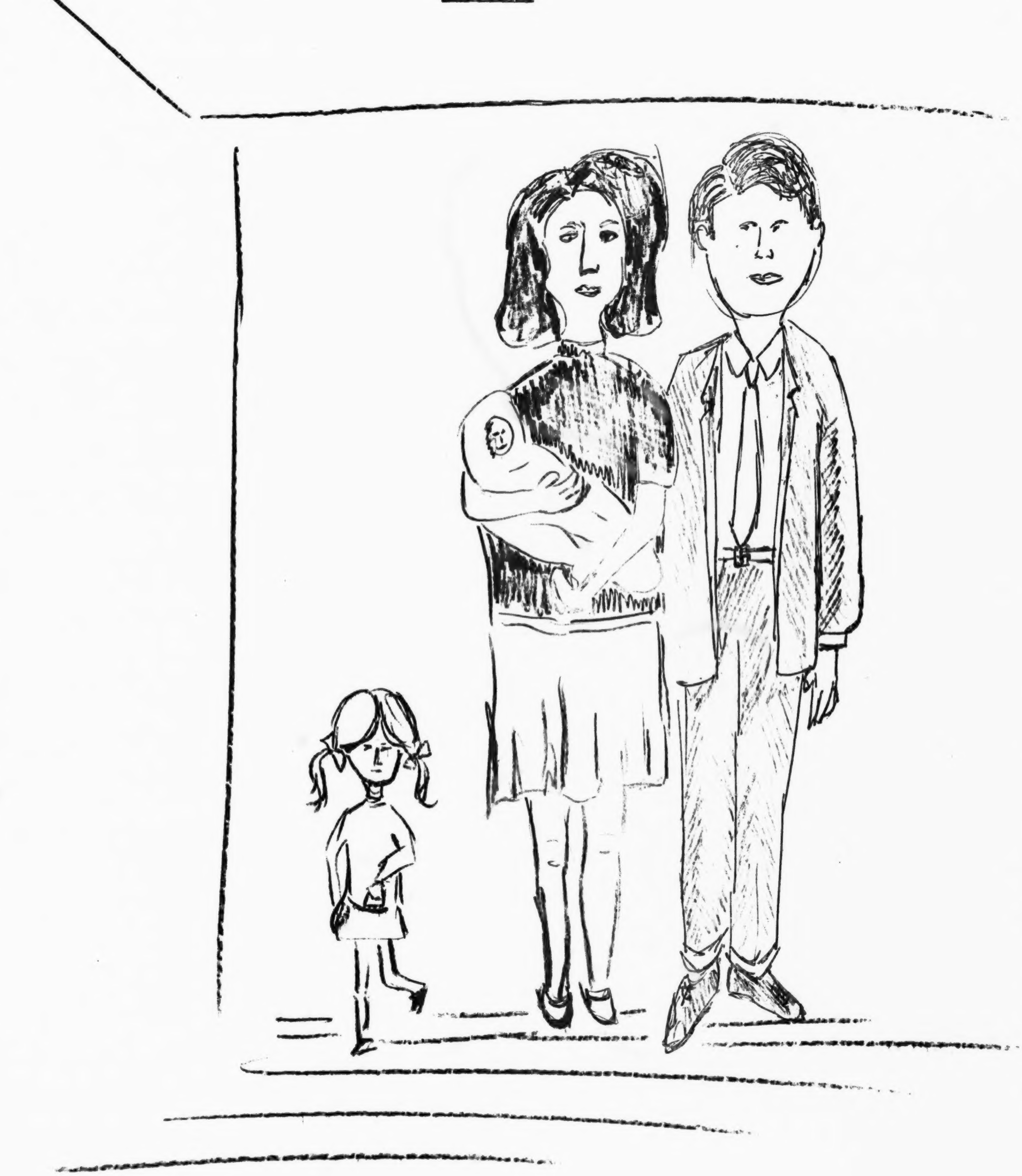
   a. Family with foreign exchange student
   b. Family with foster children of different race
   c. Family with grandparents or housekeeper

   For discussion draw conclusions as to how these families are alike. Are any of these families like yours? How are these families different from yours?

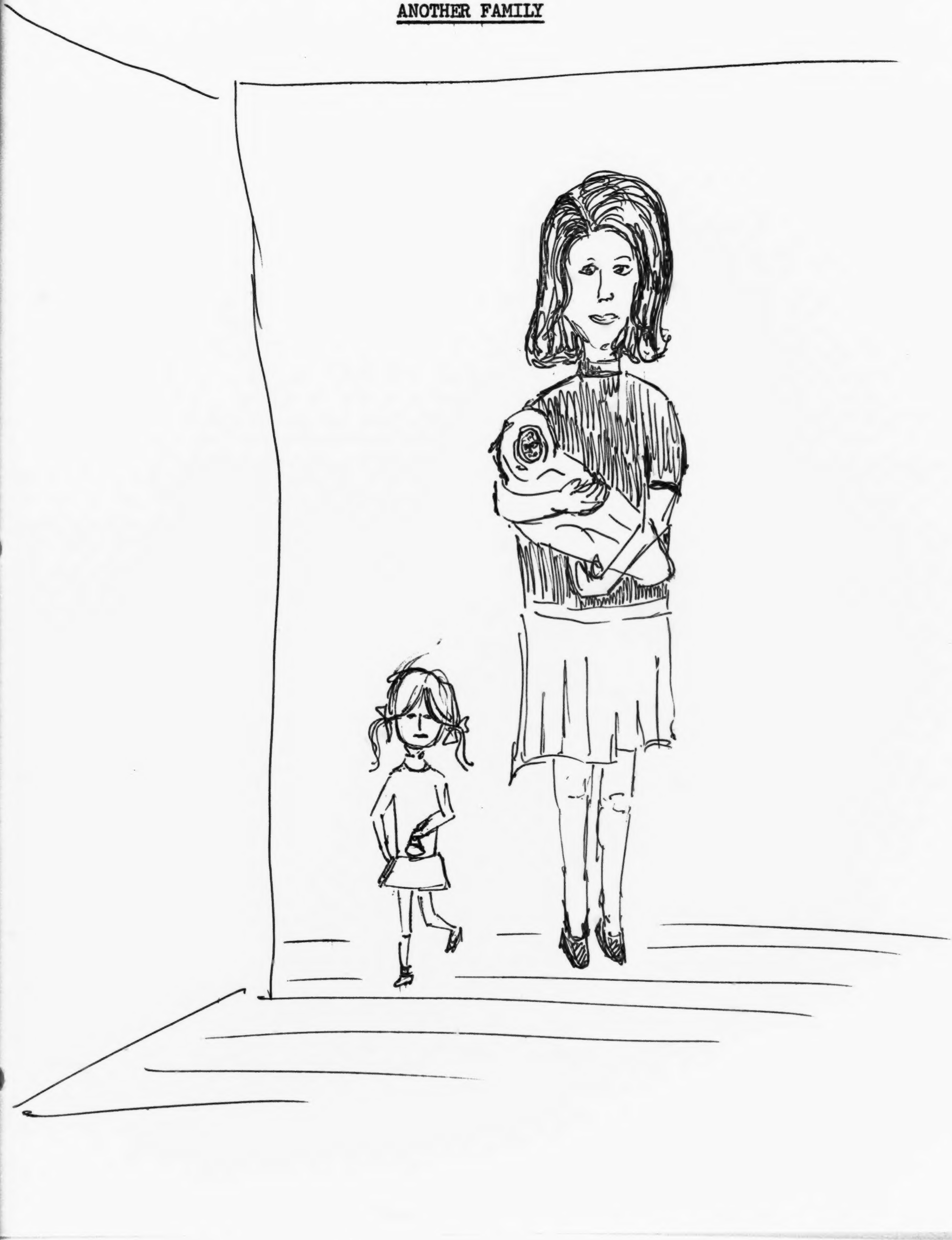
10. Draw family trees (third and fourth grades only).

11. Discuss one parent families.

A FAMILY



ANOTHER FAMILY



E. Resources

For Teachers:

1. Anderson, Coon, Dobler, Stoddard, Weaver. Families and Their Needs, Book I, Teachers' Edition, Morristown, N. J.: Silver Burdett, 1966, pp. 6-33.

2. Ojemann, Ralph H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health, Book V, Iowa City, Iowa: State University of Iowa, 1962, pp. 141-146.

3. Wann, Sheehy. Learning About Our Families. Boston: Allyn and Bacon, 1962, pp. 5-15.

For Students:

1. Buckley, Helen E. Grandfather and I. New York: Lothrop, 1959.

2. Buckley, Helen E. Grandmother and I. New York: Lothrop, 1961.

3. Miles, Betty. A House for Everyone. New York: Knopf, 1958.

LESSON THREE

RESPONSIBILITIES OF FAMILY MEMBERS

Concept: Parents with children have their own responsibilities.

A. Content

1. Parents have special roles and responsibilities.
   - a. Love for children
   - b. Physical care and protection of children
   - c. Education (moral, academic, personality) of children
   - d. Care of home
   - e. Financial managing, budgeting, and saving money. Occupation as related to income, social position, education, community responsibility, etc. (4th grade)
2. Children have special roles and responsibilities.
   - a. Love for parents and other household members
   - b. Development of a thoughtful attitude
     - (1) Patience and understanding toward others in family
     - (2) Child shows his attitude by performance
   - c. Responsibility to self
3. Family members provide love and security for each other.

B. Vocabulary

responsibilities
protection
financial
physical needs
love
obedience
household
parents
patience
thoughtful (thinking of others' feelings and wants)

C. Introductory Discussion

1. What do your parents do to take care of you?

2. How do parents help each other?

3. What causes parents to become upset?

4. Do you want to show your parents how you love them?

5. How can you show other members of the household that you love and respect them?

6. What is thoughtfulness?

7. How do you show thoughtfulness?

8. What is patience?

9. At the beginning of each day, do you ask yourself, "What will I do to make my family a happier family today?" Count on your fingers all the good things you've done today.

D. Activities

1. Read and discuss the book, "Daddies, What They Do All Day."

2. Make gift of promises for mother, "I will pick up my toys," "I will make my bed," etc. Mount these promises on a card.

3. Act out proper ways to do the following:

   a. Answer the phone.
   b. Greet and introduce people.
   c. How to act when you are a guest and when you have a guest (use a tape recorder).
   d. Think of a way to make a game out of some unpleasant task.
   e. Collect pictures for bulletin board. Put under two headings: "Things we must have" and "Things we want to have."
   f. Draw pictures showing things you can do alone, and things for which you must have help. Draw the same kind of pictures showing the activities parents can do alone and for what activities they need help.

4. Poems.

Be Right at Night

I heard my mother say last night,
It's time to go to bed.
She ran the water warm - just right,
And said, "Don't wet your head!"

I sailed my boat on a bubbly sea
(But a fireman's what I want to be.)
"Your ears? your neck? between your toes?"
I answered, "Oh, yes - I washed all those."

I dried off fast because I was cold,
And brushed my teeth as I was told.
Into bed I hopped: that part's the best;
I have a new book, "The Golden Nest."

Before I read to the very end
I felt my head begin to bend.
Mother finished the story - it turned out just right;
She gave me a kiss and wished me good night.

Does It Matter When You Go to Bed?

How do you get ready for school?
Do you hate to get going like a stubborn old mule?
Do you hop out of bed and find your clothes
Where you laid them out right under your nose?

Do you wait till you're called ninety-seven hundred times?
Or do you get right up when the first bell chimes?
Did you help yourself the night before?
Or did you stay where you were like you were glued to the floor?

When someone called you from the playroom door,
And said it was time for play no more -
Did you pick up your toys
(Like some girls and boys)
And go right ahead and get ready for bed?

Or did you try every trick you thought you might know
To stay up later, even though......

Are You a Mouse or an Elf?

Do you know how to help around your house?
(Or do you sit around like a little mouse?)
When it's really time to do this or that,
Do you go on sitting just where you sat?

When the meals are cooking, do you know you're able
To put the plates around the table?
Do you say, "This food tastes so good!"
And make your cook feel proud as you could?

When your brother teases you,
Do you get mad?
Or do you laugh at him
And say, "OH, he's not so bad!"

When it's time to get ready to go some place
Do you get your clothes changed and wash your face?
Do you see how you can help with the rushing around?
Take out the garbage? Lock up the hound?

When you go home from school today,
Of course, you'll surely want to play.
But think a little before or after
About what you can do to bring out laughter.

Then after just a little while
Surprise your family with an extra smile.
Or dream up something all by yourself
To help someone along the way

(That's even better - they'll think an elf
Has come to stay in your house today!)

E. Films

1. Allen is My Brother. Available from the University of Illinois Film Rental Library.

2. Your Family. Available from the University of Illinois Film Rental Library.

F. Resources

For Teachers:

1. Anderson, Coon, Dobler, Stoddard, Weaver. Families and Their Needs, Book I, Teachers' Edition, Morristown, N. J.: Silver Burdett, 1966, pp. 34-95.

2. Radlauer, Ruth. Fathers at Work. Los Angeles: Melmont, 1958.

3. Radlauer, Ruth. Women at Work. Los Angeles: Melmont, 1959.

4. Senesh, Lawrence. "Families at Work" in Our Working World, Book I, Chicago, Illinois: Science Research Associates, 1965, pp. 232-236.

For Students:

1. Duncan, Lois. Silly Mother. New York: Dial Press, 1962.

2. Lansing, Jane. Being Nice is Lots of Fun. New York: Hart Publishing Company, 1955.

3. Puner, Helen, and Duboisin, Roger. Daddies, What They Do All Day. New York: Lothrop, 1966.

4. Martignoni, Margaret. Every Child's Story Book. New York: Franklin Watts, Inc., 1959, p. 252.

5. Taylor, Sydney. "Dusting is Fun," in All-of-a-Kind Family, Chicago, Illinois: Follett Publishing Co., 1952, p. 25.

LESSON FOUR

THE CHILD'S ROLE IN THE CYCLE OF FAMILY

Concept: Children become members of families when they are born. They eventually grow up to become men and women, probably marry and may become parents.

A. Content

1. Family structure changes when a baby arrives.
   - a. Mother and father live differently when a baby arrives.
   - b. Other members of the family live differently too.
2. Human babies in contrast to animal babies are helpless. Animal babies can do many things such as standing up and moving about.
   - a. Without adequate care, the baby could not stay alive.
   - b. Human babies spend much time eating and sleeping.
   - c. Human babies, in contrast with animal babies, grow very slowly into childhood and adulthood.
3. When children grow up, most marry and may become parents.

B. Vocabulary

adapt (third and fourth grades)
born
life
human

C. Introductory Discussion

1. What does the family do to get ready for the baby? (Note to teacher: Discussion of what physical and emotional changes take place.)
2. How did your mother and father adapt to a new family member when you were born?
3. How would your life change if a baby arrived?
4. What is a human baby like?
5. What is a baby animal like?
   - a. puppies, kittens
   - b. fish
   - c. chicken
   - d. horse

6. How are human babies and animal babies alike and different?
7. When can your mother and daddy stop taking care of you?
8. When do animal parents stop taking care of their young?

Discuss the development of children into adults. Stress the number of years needed to prepare for assuming family responsibility.

D. Activities

1. Draw pictures showing ways of getting ready for the baby.
2. Collect pictures of items that go into a baby's layette.
3. Find out and report to class
    a. How a baby is bathed
    b. What is in a baby's formula
    c. How a baby is taken care of during the day and night at 2 weeks of age, 2 months, 6 months, etc.
4. Hatch eggs using incubator.
5. Discuss pictures of animal babies, stress classification and names of young.
6. Poems.

What Good Is a Baby Sister?

I'm very fond of playing
In my sandbox all alone
Or seeing what a castle
I can build of rock and stone.
But now and then I'm lonesome
For a friend to play with me
I have a baby sister,
But she can't climb a tree.

When she first came to live with us
I really didn't know
How much she had to learn yet
How much she had to grow.
Why, she can't chew a candy bar
Or play upon the floor
She eats and sleeps and cries some
Then eats and sleeps some more.

This all sounds dull to you, I know,
But really, it isn't so.
I love to watch her sleep and stir
Touch her soft skin, curl her hair.
I try to show my book to her
And find that I don't care
For every time I'm near her bed,
She laughs and even turns her head.

When she is tired and hungry,
Mother calls me to come.
I speak and she's so quiet,
And then I start to hum.

I can't imagine she'll ever grow big,
Though mother says it's true.
Here I thought she had to play with me -
But that was before I knew
The wonder of her fingers reaching,
The fun of our family, loving and teaching.

Growing and Knowing

It's hard to notice growing high,
Though others see it for you -
Aunt Eloise is sure to cry,
"My, how you've grown! Oh my, oh my!"

She makes me feel so silly -
Doesn't she know I'm still me, really?
I peek at my toes right there on the ground,
Turn up my nose and look all around.
Beats me what all the fuss is about
I grin, say "Hi," and go on out.

How do you know you're growing taller?
It's a sure bet that you're not getting smaller!
Can you reach the cookies up on the top shelf?
What else can you do all by yourself?

I can wiggle my ears and hold my temper,
And I know the Latin word for always - it's semper!
But maybe you don't care about things like that at all
Maybe you're best at jumping rope or playing ball.
Do you collect old pop-bottle caps?
Or have a live turtle that wiggles and snaps?

We're different, we're alike; understanding is a game.
You sure can't tell a person just by his name,
Or his eyes, his walk, the way he treats his brother;
It takes knowing many things and weighing one against the other.

E. Films and Other Instructional Aids

1. Mother Hen's Family. Coronet Films.
2. Looking at Mammals, EBF. Available from C.I.C. Film Library.
3. "A New Baby in the Family" from Beginning the Human Story, Scott, Foresman and Co.
4. "Won't You Be My Neighbor?" L.P. Recording, Mister Rogers, Pittsburgh, Penn.: Small World Enterprises, Inc.

F. Resources

For Teachers:

1. Navarra, John G., and Zafforoni, Joseph. Today's Basic Science, Book II, Teachers' Edition, New York: Harper Row, 1967, p. 43. (Chart showing names of animals.)
2. Selsam, Millicent E. Animals as Parents. New York: William Morrow & Co., 1965.
3. Selsam, Millicent E. The Courtship of Animals. New York: William Morrow & Co., 1964.

For Students:

1. Eastman, P. D. Are You My Mother? New York: Random House, 1960.
2. Gruenberg, S. M. The Wonderful Story of How You Were Born. Garden City, N. Y.: Doubleday and Company, Inc., 1959.
3. Hobson, Laura Z. I'm Going to Have a Baby. New York: The John Day Co., 1967.
4. Mann, Peggy. That New Baby. New York: Coward-McCann, Inc., 1967.
5. North Shore Committee on the Older Adult, Growing Up, Growing Older, New York: Holt, Rinehart and Winston, Inc., 1964.
6. Parker, Bertha M. Watch Them Grow Up. Evanston, Illinois: Row Peterson & Co., 1959.
7. Selsam, Millicent E. All Kinds of Babies and How They Grow. Eau Claire, Wisconsin: E. M. Hale & Co., 1953.
8. University of Illinois. From Egg to Chicken, Free Circular No. 878, University of Illinois Cooperative Extension Services (201 N. Dunton Ave., Arlington Heights, Illinois).

LESSON FIVE

NEED FOR RESPECT FOR SELF, FOR FAMILY AND COMMUNITY

Concept: Children should understand their own feelings first; then they can understand others and meet life adequately.

A. Content

1. Children should respect themselves as individuals with certain rights.
2. Every person should know his needs and rights so that he can better understand himself and the reasons for his behavior.
3. As children are taught that individuals differ in capabilities and needs, they will begin to appreciate their own abilities and to appreciate the accomplishments of others.
4. As children learn that families differ just as children differ, they will learn to appreciate the other families with different backgrounds that make up a neighborhood or community.
5. Families are different and we must learn to appreciate their differences.
6. Differences are very good and make life interesting. It would be very dull if we were all the same.

B. Vocabulary

needs
likenesses
different
respect
psychological
capabilities

culture
individuality
ethnic
accomplishments
physical
emotional

Rights - age affords some rights. For example, an older child should be able to stay up later than a younger one. Property affords some rights. One child does not have the right to use another child's toy without asking.

C. Introductory Discussion

1. What does respect mean?
2. Are you a good - son, daughter, brother, sister, neighbor? Why?
3. What are your needs? (Note: Both physical and emotional needs, food, clothing, shelter, love, patience, understanding, etc.)

4. How do the needs of each member in your family differ?

5. Discuss how the families of children within the classroom have different activities, customs and foods.

6. Discuss likenesses and differences in communities and in the countries of the world.

D. Activities

1. Read and discuss "The Turnabout Day", from A Teaching Program in Behavior and Mental Health, Book II.

2. Make a scrapbook or bulletin board with pictures showing the physical and emotional needs of children.

3. Draw pictures showing needs of other members of the family.

4. Read and discuss resource books for children.

5. Invite resource people to discuss their cultural background.

6. Make a display showing different cultural backgrounds. For example, compare the clothing, food, or toys of each grouping.

7. Read and discuss holidays around the world.

8. Act out or use puppets to show how children might feel and how they should be accepted when they have physical differences:

   a. fat
   b. short
   c. skin color
   d. physical deformity

E. Films

1. Country Mouse and City Mouse. Coronet Films. Available from C.I.C. Film Library.

2. Children of China, EBF. Available from C.I.C. Film Library.

3. Children of Holland, EBF. Available from C.I.C. Film Library.

F. Resources

For Teachers:

1. Anderson, Coon, Dobler, Stoddard, Weaver. Families and Their Needs, Book I, Teachers' Edition, Morristown, N. J.: Silver Burdett & Co., 1967, pp. 112-127.

2. Communities and Their Needs, Book II, Teachers' Edition, Morristown, N. J.: Silver Burdett & Co., 1967, pp. 22-40, 92-109.

3. Ojemann, Ralph H., Hughes, J. E., and Chowning, K. *A Teaching Program in Human Behavior and Mental Health*, Book II, Iowa City, Iowa: State University of Iowa, 1962.

For Students:

1. Dudley, Ruth. *Good Citizens, Good Neighbors*. Chicago: Melmont Publishers, Inc., 1957.
2. Duboisin, Roger. *Our Veronica Goes to Petunia's Farm*. New York: Knopf, 1962.
3. Israel, Leo. *Our New Home in the City*. New York: Holt, Rinehart & Winston, 1963.
4. Lesieg, T. *Come Over to My House*. New York: Random House, 1966.
5. Schlein, Miriam. *City Boy, Country Boy*. Chicago: Children's Press, 1955.

LESSON SIX

THE RULES AND VALUES GOVERNING CHILDREN, ADULTS, FAMILIES, AND SOCIETY AT LARGE

Concept: Living by established rules and values is a way of assuming responsibility for one's own actions and appreciating the rights of others.

A. Content

1. Some basic values should be understood by everyone.

   a. love
   b. truthfulness
   c. honesty
   d. obedience
   e. thoughtfulness
   f. appreciation for others
   g. trustworthiness

2. The observation of these basic values in every day living will lead to a better society and enable each individual to live a more rewarding life.

3. Individuals should try to apply these basic values even though it may be difficult.

4. There are rules for the child and for the family, in the classroom, in the school, the community, the nation, and the world. (Relate the need of laws in order to enforce rules.)

B. Vocabulary

love
truthfulness
honesty
obedience
appreciation
trustworthiness
thoughtfulness

authority - power or right given to a person or group.

C. Introductory Discussion

1. What are some of our basic values?

2. How should these basic values become part of our daily lives? (See activities.)

3. Has someone ever talked you into doing something that you know is wrong? What did you do?

4. Have you ever let another member of your family take the blame for something you did?

5. What are some rules you live by?

6. What are some rules grown-ups live by?

7. What are some of the rules for the classroom, the school, the community, the nation and the world?

8. What would happen if there were no one in charge who assumed the responsibility for others?

   a. at home without a baby sitter with parents gone.
   b. in the classroom while the teacher is absent.
   c. in games - umpires, referees.

D. Activities

1. Write, tell or draw pictures about one of the following:

   a. Something you have done to be helpful.
   b. Times when you were proud of members of your family.
   c. If you could make a wish for all boys and girls, what would it be?

2. Open-end story: Susie hadn't had a turn on the playground swing for a long time. Every time she told the teacher she wanted a swing, the teacher said, "We only have a few swings and there are so many children. You'll just have to wait for your turn."

   Susie tried to get on the playground early enough in the morning and at noon so she could get a swing, but somehow she never got there early enough.

   One day the teacher said, "It's so lovely out today I think we'll have a nice long recess. Susie was delighted. She thought, "At last I'm going to get a swing." She ran to be first in line so she could be first on the playground.

   The teacher saw her and said, "Susie, you ran. You'll have to go to the end of the line." How do you think Susie felt? What do you think Susie did?

3. Discuss the meaning of the chart on next page.

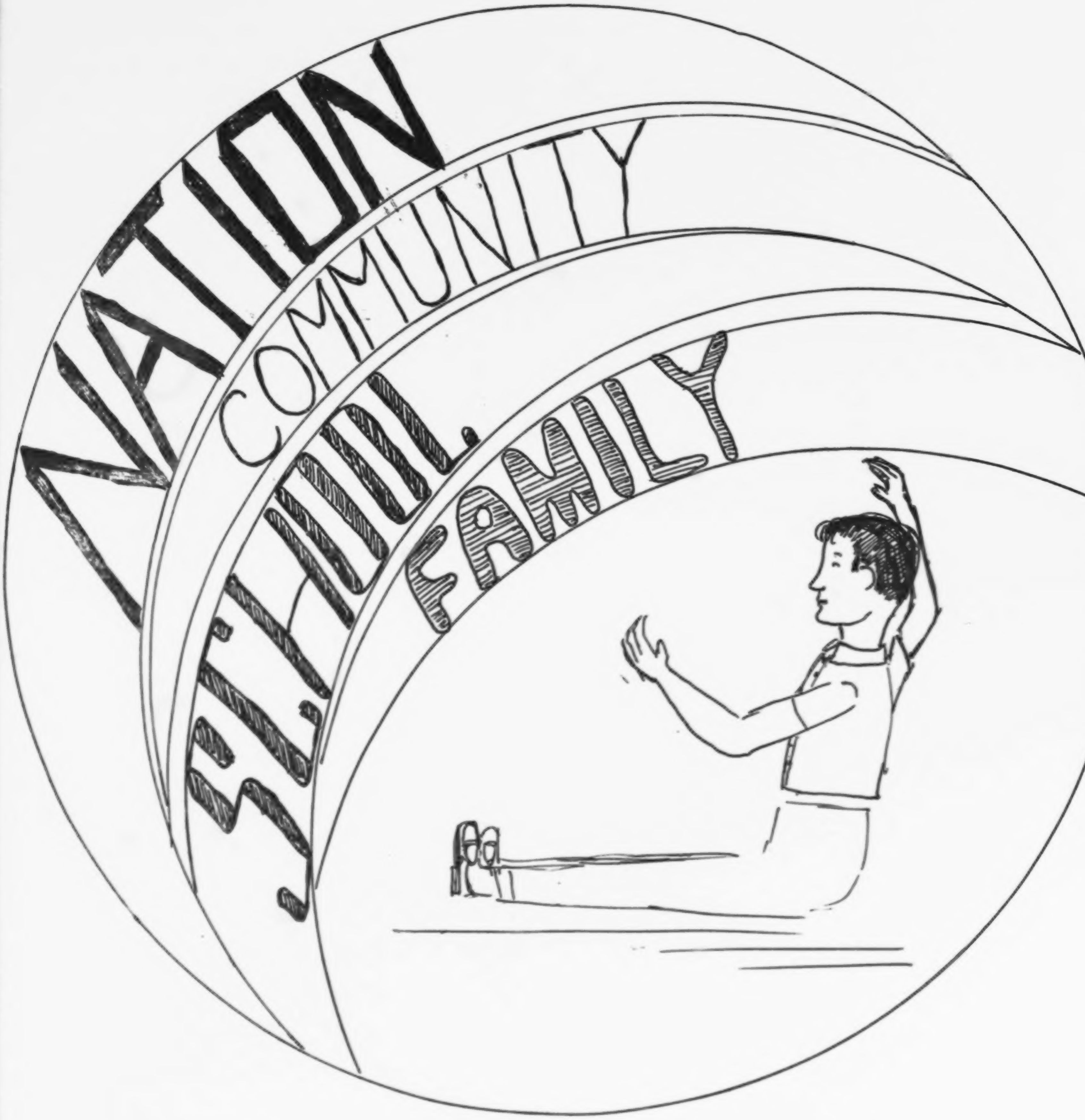
4. Read poems identified in the references listed at the end of this lesson.

5. Dramatize or discuss rhymes in "Being Nice is Lots of Fun."

6. Open-end stories to introduce questions 3 and 4:

   Has someone talked you into doing something that was wrong?

THE INDIVIDUAL


NATION
COMMUNITY
SCHOOL
FAMILY

Jimmy's parents had always told him not to cross the railroad tracks without a grownup. He had just moved to a new town and some of the kids in his new neighborhood had asked him if he wanted to go to the park with them. He asked his mother if he could go and she had said yes.

As the children walked along, Jimmy saw that they were coming to a railroad track. Jimmy said, "Do we have to cross the tracks to get to this park?"

A boy named Spike said, "Yep." "Then I can't go," said Jimmy. "Why not?" said another boy. "Because I'm not supposed to cross the tracks without a grownup." "Why not?" said Spike, "We do it all the time." "Well, I can't," said Jimmy. "Oh, that was probably just in your old town where you used to live. These aren't busy tracks, and besides this is the only way to get to the park," said the other boy. "I really shouldn't," said Jimmy. "Gosh, your mother said you could go to the park," said Spike. "I know, but she didn't know we'd have to cross the tracks."

"Well, we're going to the park, and you can go home alone if you want," said the other children.

"We-l-l, oh, only I know it's wrong," said Jimmy.

The children went to the park. It had all kinds of play equipment, but Jimmy didn't really enjoy it. Of course, he didn't let the other children know this.

Question: What do you think happened when Jimmy got home? Should he tell his mother? Will he get in trouble?

7. Have you ever let another member of your family take the blame for something you did?

It was a very rainy, slushy day. Jill ran all the way home from school so that she wouldn't miss her favorite television show. When she ran in the door, she remembered to get a piece of newspaper to put her boots on as mother had asked the children to do. Then she turned on her program.

Just as the program was starting, Jack came in the door. He knew he was supposed to get newspaper to put his boots on, but he was afraid he'd miss the beginning of the program. So, he took Jill's boots off the paper, put them on the rug, and put his own on the paper. He thought, "Her's are probably dry by now anyway."

Later, Mother came in. She had a very angry look and said, "Jill, I told you to put your boots on newspaper. Just look at the mess on the clean rug. I'll never get that out."

Jill said, "I did put my boots on newspaper." Mother said, "Well, what are they doing on the rug then?" Jill said, "Well, I thought

I did." Mother said, "Thinking isn't enough. You were in such a hurry to watch that T.V. program, you just dumped them down. You get busy and start to get the rug clean and I think you'll just have to miss your program for the next week." Jack didn't say anything.

What do you think happened later? How did Jack feel? What should Jack have done?

E. Resources

For Teachers:

1. Krauss, Ruth. I'll Be You and You Be Me. New York: Harper and Brothers, 1954.
2. Leaf, M. How to Behave and Why. New York: Lippincott, 1946.
3. Manners Can Be Fun. New York: Lippincott, 1946.
4. Ness, Evaline. Exactly Alike. New York: Charles Scribner & Sons, 1964.

For Students:

1. Bromhall, Winifred. Bridget's Growing Day. New York: Alfred A. Knopf, 1957.
2. Flack, Marjorie. Ask Mr. Bear. New York: Macmillan Co., 1958.
3. Seuss, (Dr.) The Sneetches and Other Stories. New York: Random House, 1961.
4. Stover, Jo Ann. If Everybody Did. New York: David McKay Co., 1960.

UNIT TWO

MENTAL AND EMOTIONAL HEALTH

Introduction

Growth of the child's sense of personal worth and ability to make responsible decisions is enhanced through discussion of feelings, rules for living with others, and learning to think more of the effects of one's behavior. The approach employed in this unit, as in the total program, emphasizes the relationship between behavioral causes and effects. The purpose of this unit is to develop in the child a discipline, or a habit; to examine alternative possibilities of action, then to choose one that is most likely to bring the results one desires.

This unit is composed of four lessons that are planned for children in grades kindergarten through four. The following chart shows when the lessons should be introduced and when they should be emphasized:

		GRADES				
LESSON	TITLE	K	1	2	3	4
One	Emotions Children Experience	-	X	X	E	E
Two	Understanding Other People	-	X	X	E	E
Three	Accepting One's Self	X	X	E	E	E
Four	Accepting Responsibility	-	X	X	X	E

LESSON ONE

EMOTIONS CHILDREN EXPERIENCE

Concept: Children know and are able to talk about many different feelings they have from time to time, such as love, fear, anger and dislike.

A. Content

1. Babies learn to love as they are loved; they learn this feeling and many others as they live and grow, and as they associate with the members of their family and a gradually growing circle of other people.

2. As we experience feelings, we learn to identify them.

3. We don't always understand our feelings because the way we feel and the reasons for feeling that way are often influenced by many things at the same time.

B. Vocabulary

As children name and discuss specific emotions, the teacher should help and encourage the group to tell what the word means and discuss the different situations in which one might have that feeling.

feelings
emotions

C. Introductory Discussion

1. Do you always feel the same way? What are some of the feelings you have at different times?

2. How do you show what you are feeling? Do you always show what you are feeling? Do you always mean to show your feelings?

3. Is it always easy to explain exactly how you feel about something, or how you feel at a certain time? Can you think of an example? How about someone you know well? Do you always have the same feelings toward every person? How about going to bed on time? Do you find that you want to go to bed for some reasons and don't want to for other reasons? What else can you think of?

D. Activities

1. Read and talk about one of the Heller or Schulz books. Have each child draw and write (or dictate to the teacher) a statement about a particular feeling, e.g., "Happiness is......, Misery is......" As appropriate narratives, poems, records, and films are used during the year, a regular follow-up activity would be to discuss various special feelings expressed by a character in the story. The class could agree on one

special feeling and each make up his own picture and statement. These can be used first on a bulletin board, then put together in a booklet and left on the reading table. Sample titles might be: "Anger is....," "Fear is....," "Jealousy is....," "Being big is....," etc.

2. Have children choose a situation where it isn't easy to explain how a person is feeling and act it out. For example, a little boy has a penny which he wants to put in his bank because he's saving money for a toy he wants; but he'd also like to go to the little store and buy a piece of bubble gum. His best friend comes along and says he needs one more penny to buy an ice cream cone and he'll let him play with his new ball if he'll give the penny to him.

3. Read and discuss the poem "Lonely."

Lonely

One Saturday my mother
Was too busy to be gay.
   My sister had a friend in
   And told me to stay away.
Dad wasn't home from work yet--
   It was very early in the day.

Have you ever looked around you
And wondered what to say?
   What to do?
   What to play?

I know there are so many things
   That children ought to like.
I have my toys and games at home,
   My scooter and my bike.
I shouldn't feel so lonely,
   But just the same I do--
Tell me what you'd do then
   If you were me and I were you.

E. Film

1. Getting Angry. Available from the University of Illinois Film Rental Service, Champaign, Illinois.

F. Resources

For Teachers:

1. Dinkmeyer, Don C. The Encouragement Process. Boston: Prentice-Hall, 1963.

2. Menninger, William C. Self Understanding, A First Step to Understand Children. Chicago, Junior Guidance and Better Living Booklets, Science Research Associates, various years.

3. Ross, Helen. Fears of Children. Chicago: Science Research Associates, 1957.

4. School Health Education Study, A Summary Report of a Nationwide Study of Health Instruction in Public Schools. Washington: School Health Education Study, 1964.

5. Williams, Dorothea M. Health Science. New York: J. B. Lippincott Co., 1967, pp. 2-149.

For Students:

1. Anglund, Joan W. Love is a Special Way of Feeling. New York: Harcourt, Brace and World, 1955.

2. Beim, J. Laugh and Cry. New York: William Morrow and Co., 1955.

3. Heller, Suzanne. Misery. New York: P. S. Erickson, Inc., 1964.

4. Heller, Suzanne. More Misery. New York: P. S. Erickson, Inc., 1965.

5. Schultz, Charles M. Happiness is a Warm Puppy. San Francisco, Calif.: Determined Productions, Inc., 1962.

6. Schultz, Charles M. Happiness is a Sad Song. San Francisco, Calif.: Determined Productions, Inc., 1967.

7. Leaf, Munro. Boo, Who Used to be Scared of the Dark. New York: Random House, 1948.

LESSON TWO

UNDERSTANDING AND LIVING WITH OTHERS

Concept: Because children have experienced many different feelings themselves, they are able to identify and discuss the feelings that others have, and see that these shared and "duplicated" experiences can further a spirit of cooperation at home, at school, in the community at large.

A. Content

1. Because we have experienced many feelings ourselves, we are able to make reasonable guesses about how others are feeling.
    - a. When you see what is going on you know how you would feel if you were that person.
    - b. Others sometimes tell us about how they are feeling.
    - c. We can guess how others are feeling from the way they are talking and acting, and by noticing expressions on their faces.
    - d. When we know a person well, we can even guess how he would act in a certain situation.
2. Knowing and learning more about our own and others' feelings helps us all live together more easily.
    - a. When we understand what others want, or what causes them to act the way they do, we can often cooperate with them in a friendly way.
    - b. Our own lives are made more pleasant because others often do the same for us.

B. Vocabulary

cooperate
cooperation
share
responsible

experience
guess
reasonable

C. Introductory Discussion

1. What tells you how another person is feeling at a certain time? Does the way he talk tell you anything? About the way he acts? How about the expression on a person's face? Does another person ever tell you about the feelings he is having? How else are you able to know about how others feel? Do you think others' feelings are anything like your own feelings? Are you better able to understand how another person feels because the same thing or something like it has happened to you?

2. How about someone you know pretty well? Are you able to imagine how that person would act at a certain time? For example, if you take an unusually long time to get home, do you think you might know what your mother will say or do? Think about one of your friends: can you guess how he would behave if you were playing a game together and he won? If he lost? (For older children, the teacher may wish to introduce the words "personality" and "consistency" and encourage the children to realize that every person has a unique self-organization which means that he meets similar situations in a similar way).

3. Most of the time would you say we think more about our own feelings or more about the feelings others might have? How about everyone else? Is every person usually thinking more about what he wants than what someone else wants? (The children should begin to see that adults and older children who are close to them are often thinking more about what someone else wants at a certain time. Also, at their own peer level, they'll begin to see that living, working and playing together necessitate sharing, cooperation, tolerance and forgiveness. Older children may move to a discussion of rules, including laws.)

D. Activities

1. Use the illustration entitled "How We Express Our Feelings" and see if children can identify a few more expressions of feelings.

2. Sing or play a record of "Getting to Know You," from The King and I.

3. Have children collect pictures that show various emotional expressions. Display these in the classroom with labels identifying each feeling.

4. Read together "Your Face is a Picture" by Eth and David Clifford, E. C. Seale and Company, Inc., 1963.

5. Read and discuss the selections from Ojemann, Ralph H., et al, listed below:

Kg. "The New Mittens," Book I, p. 41.
"Boko, the Monkey," Book I, p. 47.

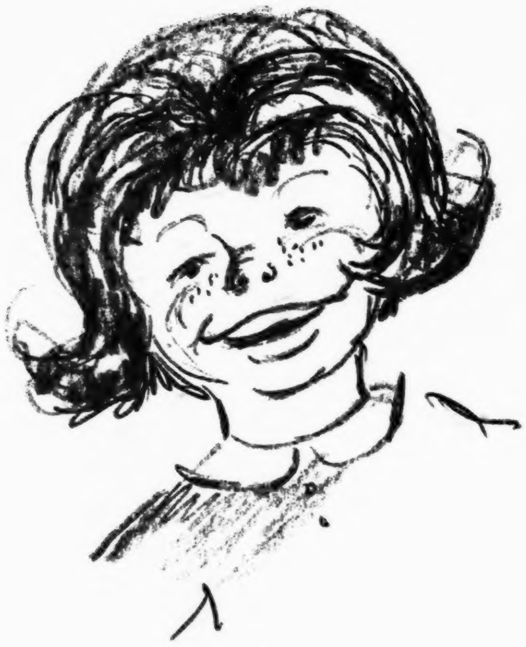
1 "The Broken Crayon," Book I, p. 99.

2 "Buster Didn't Want To," Book II, p. 29.
"The School Environment," Book II, p. 201.
"Good Aim," Book II, p. 91.

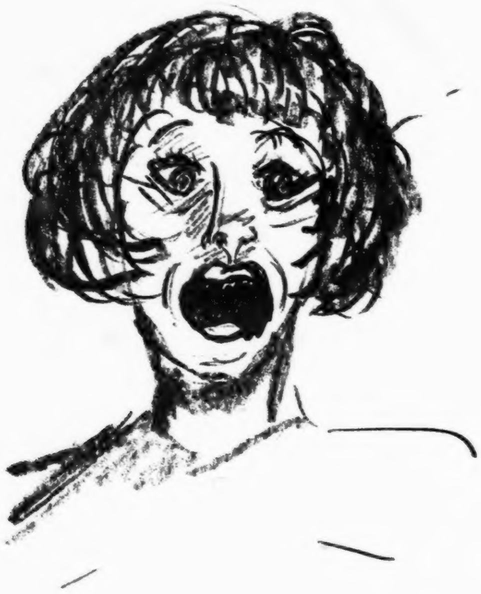
3 "The Work of the Principal," Book III, p. 122.
"Amy Wants to be Boss," Book III, p. 103.

4 "The Day the Bus Was Late," Book IV, p. 65.
"A New Girl at School," Book IV, p. 102.

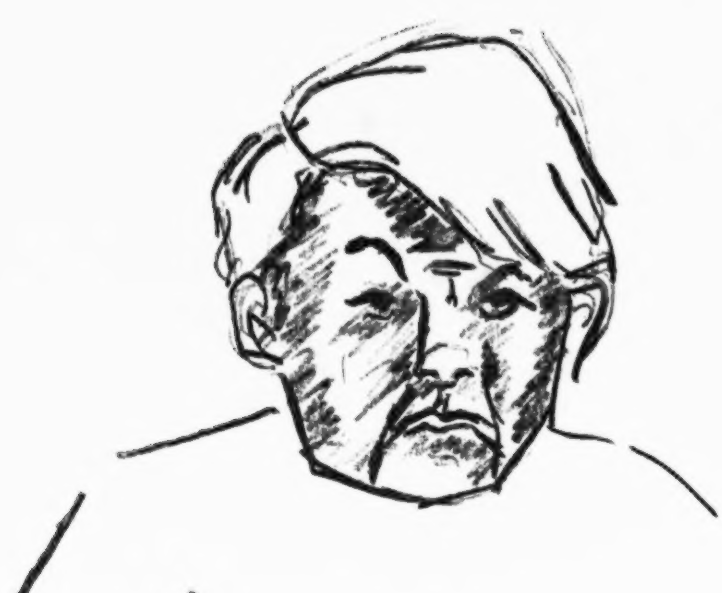
HOW WE EXPRESS OUR FEELINGS



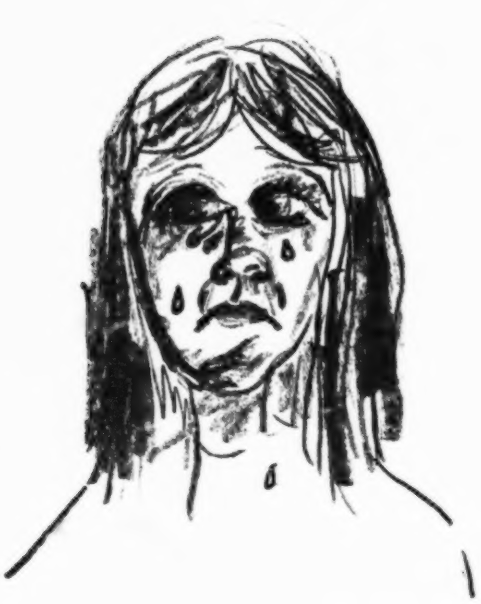
HAPPY



AFRAID



ANGRY



SAD

E. Films

1. People Are Different and Alike. Available from the University of Illinois Film Rental Service, Champaign, Illinois.

2. We Play and Share Together. Available from the University of Illinois Film Rental Service.

F. Resources

For Teachers:

1. Jarolimek, John. Social Studies in Elementary Education New York: Macmillan Co., 1964, pp. 356-378.

2. "Mental Health in the Classroom," Journal of School Health. Columbus, Ohio: American School Health Association, May, 1968.

3. Peters, Herman J., Shelley, Michael, and McCormick, Roger. Programs for Elementary Guidance. New York: Random House, 1966. (It is essential that teachers be acquainted with this program before teaching this unit.)

4. Presno, Vincent. People and Their Actions, Grade 1, New York: Prentice-Hall, 1967.

5. Ojemann, R. H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health. Iowa City, Iowa: State University of Iowa, Books I, II, III, IV.

6. Rogers, Dorothy. Mental Hygiene in Elementary Education. Boston: Houghton Mifflin Co., 1957.

For Students:

1. Anglund, Joan W. A Friend is Someone Who Likes You. New York: Harcourt, Brace & World, 1958.

LESSON THREE

ACCEPTING ONE'S SELF

Concept: Every person is different in his own way and each one has to feel a sense of personal worth.

A. Content

1. Though people are similar in so many ways, each person is a unique expression of the total characteristics of human beings.

   a. Each person looks different from all other people, and each is a little different inside, too. (See Unit III)

   b. No one person's abilities, experiences, and training are quite like another's - not even children in the same family, or in the same class at school.

   c. People grow and develop at different times and in different ways, sometimes faster, sometimes more slowly; growing up is not just getting bigger.

   d. In every culture, there are differences in what is expected of a person, depending on whether he is a boy or a girl. There are differences in the way feelings are expressed, in dress, games, and manners.

2. Every person wants to feel a sense of personal worth.

   a. Some experiences help us feel better about ourselves.

   b. Other experiences don't help us feel very good about ourselves.

3. There are things a person can do to help himself feel he counts for something.

   a. We try new things; find out about and practice what we want to know or be able to do.

   b. We learn to accept, and learn from, our failures and mistakes.

   c. We can talk over things that make us uncomfortable and what to do about them with responsible older people as our parents, teachers and older friends.

4. We can treat others in a kindly way to help them feel they count for something, too.

5. The more each person knows and is comfortable with himself, and the better he is able to make the best of what he is, the better he can get along with new ideas and people, situations where he has to solve problems, accept disappointments and make decisions.

B. Vocabulary

similar
different
experience
training
education

growing up
decision
problem
"count for something"

C. Introductory Discussion

1. How are people alike? How about the way they look? The way they live? Do most people live in a house or an apartment? Do they grow up in a family? Do most children go to school? Then go to work? Get married and have families of their own to take care of?

2. How are people different? Does any person look just exactly like every other person? Can every person do just exactly what another person can? Is everyone interested in exactly the same things? Do people act just alike? How about growing? Does everyone grow to the same height and weight? Are children of the same age likely to be the same height and weight? Is growing just getting bigger? What else do we mean when we talk about growing up? Let's think about the things we can do. Do all people have the same ability to do different things? (read? run? cook? draw? share? cooperate? think? write?). Does everyone find it equally easy to learn how to do something new?

3. What other things happen to us as we grow? What kinds of things do we learn to do? What help us learn the things we want to learn? What keep us from learning what we want to learn? Do we always mean to learn everything we do learn? Are some of the things we learn really things we'd rather not know? (For example, do you have a habit you wish you hadn't learned in the first place?)

4. How about boys and girls? How are they alike? How are they different? Are boys and girls different in other ways? How about the way they dress? The way they act? The things they like to do? What they expect to do when they grow up? (As stereotyped ideas are expressed, take time with each to discuss the fact that within each boy and girl there are exceptions, and this is acceptable: girls do like to play ball; very young boys might very well enjoy dolls and playing house; some men are very good cooks; when both parents have jobs, many fathers do a good deal to help with child care, housework; many women are working successfully in a wide variety of occupations that men also excel in; girls like to wear shorts and jeans, so do boys, etc.)

5. Do you do everything better than anyone else? Are there some things you feel you do very well? fairly well? not so well at all? Is this true for everyone? Even though none of us does everything the very best, do we all want to feel that we are worthwhile? That we count for something? That others like us? That they think we are good at some things? Does a person have to be an expert to enjoy an activity?

6. What can you think of that really makes you feel good about yourself? Are you proud when you learn to ride a bicycle? Play ball? Read a new book? How about when another person praises you for something you are doing? Do you think other people feel good about themselves when they do something right? Do something fairly well? Look nice? Act kindly toward others? Are praised by others?

7. What kinds of things happen to us sometimes that don't make us feel very good about ourselves? How do you feel when you're having a very difficult time learning something you want to learn? How about when someone scolds you? When you goof? Make a mistake? Forget to do something you were supposed to do? How about other people? Do you think they feel badly at times for reasons that are like yours?

8. What do you think a person can do to help himself feel he counts for something? Does it help to admit to yourself some of the things you are able to do - and some of the things you don't do so well? How might that help? (Point out that we all must be realistic in assessing our own abilities and capacities - generally and specifically).

9. What else do you think you can do to feel better about yourself? For example, if you want to know how to do something, how can you go about it? Can other people help you in any way? How about books - do they ever help you with something you want to know? What else matters? Does what you have to work with make a difference? The place? Understanding your own self and your abilities, or size, or training? Does practice sometimes help you learn about something? Can you think of some examples? How about the way you look? What do you do that influences that? The way you act? The way you talk?

10. How about other people? Do others need you in any way to help them feel they count for something, too? How can you help another person feel good about himself?

11. Does learning how to do a particular thing better take care of all that will ever bother you about yourself? As we grow, do you think we often learn about things we'd like to know more about? Things we'd like to be better at? How about problems? Successes? Failures? Disappointments? Trying to decide what to do about something? Are we ever finished growing and learning? What helps us most with what's to come? Do we do better jobs of work, play and getting along with other people if we're happy about ourselves or not happy about ourselves? To be your best, does it help to know yourself and what you can do? How does this help?

D. Activities

1. Have each child pick out something he wants to be better at, and get together teams of workers and helpers in a few categories (each child should have a work assignment and a help assignment). Discuss together plans for attack of each challenge, if appropriate, bring in "expert" adults to help where specialized training or experience would be helpful or appropriate.

2. Use the poem "It's All Right To Cry" as basis for discussions of mistakes and failure we all have; how we can best be tolerant of others; how it helps us when they accept our mistakes and failings.

It's All Right To Cry

My friend Susie is a jolly old thing
   Whenever she gets mad at me
She always starts to sing.

If she falls down and skins her knees
   Or someone yells "Dum-Dum" and starts to tease
She cries all right, but never you fear -
   It's all root beer - just taste her tear!
(If she's really upset, I run to get a cup,
   And maybe even pinch her so she won't give up.)
My grandma sees her weeping and nods and winks her eye
   "The more that comes out that way, the less the other, by 'n by."
We giggle and snuffle and forget to sigh
   Even when it's root beer, there are limits to a cry.

E. Instructional Aids

TAMA, Division of Professional Productions, Inc., Human Sexuality Education, Pre-Kindergarten - Primary Grades, Minneapolis, Minn., 1968. (This program includes tape recordings, transparencies, and charts that are basic to this lesson.)

F. Resources

For Teachers:

1. Association for Supervision and Curriculum Development, Perceiving, Behaving, Becoming. Washington, D. C.: NEA, 1962.

2. Association for Supervision and Curriculum Development, Learning and Mental Health in the School. Washington, D. C.: NEA, 1966.

3. Jarolimek, John. Social Studies in Elementary Education. New York: Macmillan Co., 1964, Ch. 16.

4. Jenkins, Gladys. Helping Children Achieve Their Potential. Glenview, Ill.: Scott, Foresman and Co., 1961.

5. Ojemann, R. H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health. Iowa City, Iowa: State University of Iowa, 1962.

6. Williams, Dorothea. Health Science. New York: J. B. Lippincott Co., 1967.

For Students:

1. Bauer, W. W. Health for All. Glenview, Ill.: Scott, Foresman & Co., 1967. (Textbooks, K-4)

2. Beim, Jerrold. Smallest Boy in the Class. New York: Wm. Morrow & Co., 1949.

3. Bromhall, Winifred. Bridget's Growing Day. New York: Knopf, 1957.

4. Dalgliesh, Alice. The Courage of Sarah Noble. New York: Chas. Scribner & Sons, 1954.

5. Kessler, Leonard. Here Comes the Strikeout. Evanston, Ill.: Harper and Row, 1965.

6. Klein, Lenore. Runaway John. New York: Knopf, 1963.

7. Matsuno, Masako. Taro and the Tofu. Cleveland, Ohio: World Publishing Co., 1962.

8. Ness, Evaline. Exactly Alike. New York: Chas. Scribner & Sons, 1941.

9. Olds, Helen. Jim Can Swim. New York: Knopf, 1963.

10. Olds, Helen. Kate Can Skate. New York: Knopf, 1960.

LESSON FOUR

ACCEPTING RESPONSIBILITY FOR ONE'S SELF

Concept: The most important part of growing up is that children learn to take more and more responsibility for making decisions for themselves.

A. Content

1. When we are babies and very small children, older people care for us and even take responsibility for what we say and do.

2. As we learn and grow, we take more and more responsibility for our own care and decisions and actions.

   a. We are constantly making decisions, great and small, sometimes carefully, sometimes without much thought.

   b. Making a decision means choosing one of several possible ways of acting.

   c. When we consider a possible action, we consider at the same time what we expect the results of the action to be.

3. Making a decision is not always easy at all.

   a. Understanding a situation often involves sorting out very complex, conflicting and confusing ideas and facts.

   b. We may have to decide what we think is "right" or "good," and this, too, is sometimes very hard for us. We have to decide not only "what is right and good for me" but also assume responsibility to "others."

   c. We may find that some people are displeased or don't agree with our decision. Often we even know in advance that this will happen.

   d. When we make a decision, we have to accept its consequences although they may be unpleasant.

4. Even if it isn't easy, we still must practice making the decision which are allowed us by our parents and other adults who have responsibility for us.

5. We are often overly dependent on the opinions of others (our family, our friends). We must work to strengthen our faith in ourselves and our ability to make intelligent decisions. We must do what we can to make sure our important decisions will be thoughtful and responsible, both to ourselves and others.

a. Values do change, and do depend greatly on the culture in which a person grows up, whether he is a boy or girl, and the friends he associates with from time to time.

b. Today we come into regular contact with many different ideas, opinions and values because of the tremendous impact of mass communication media and rapid transportation.

c. People travel and go to live in many different places and this brings them and others into close and regular contact, with more differences in background and values.

6. In choosing from ever wider possibilities we are forced to be thoughtful about what we believe and why we believe it and what the consequences of our beliefs are.

7. We are also forced to realize that our decisions reflect our own values and the same is true for others. Therefore, we must be able to tolerate a variety of differences in each other and still maintain our own standards for behavior and for becoming the person we want to be.

B. Vocabulary

responsibility
decisions
constantly (fourth grade only)
results
conflicting (fourth grade only)
complex
consequences (fourth grade only)
values
culture (fourth grade only)
associates
impact (third and fourth grades)
communication (fourth grade only)
tolerate
reflect

C. Introductory Discussion

1. Who takes care of you at home? Does anyone else ever help take care of you here? Who else helps you here at school? Are there any other people you know who ever help care for you? (group leaders or associates, camp counselors, doctor, dentist, etc.) How about people you don't even know? Do some of them help take care of you? (Start with community helpers, then say, "In a way, do you think all people help care for each other? Workers make things and provide many services for others.")

2. Who cares about how you act? At home? At school? At the playground? Park? Pool? Store? Do people unknown to you care about how you act?

3. What do you do to help take care of yourself? What do you do for yourself that you didn't do when you were little? What do you think you'll learn to do for yourself as you get bigger?

4. How about things you decide for yourself? Do you ever choose what clothes you're going to wear? Does anything you say or do help decide when you'll go to bed? How about what you're going to play during recess? Do you have a choice? What are you going to do after school today? Is there anything you like to do by yourself when you

have a chance? What do you like to do with other people? What other things can you think of that show you often decide how to spend your time? How about when you are working or playing with other people? Do you sometimes think about what to say to another person? How to act? How about if someone else wants something you happen to be using? What do you say and do? Or, if you want to have a turn with something someone else is using. What might you say and do then?

5. When we choose what we're going to say or what we're going to do, we're really making decisions. Do you always think about these decisions? Do you mostly just talk and play without thinking about it? How much do you think you'd get done if you had to stop and think about everything before you said or did a thing? When are we most likely to stop and think about what we're going to do? (Question further, bring out when you don't know what to do, when you aren't comfortable about something, when you don't know how to go about what you think you'd like to do, etc.)

6. When we do think about what we could do at a certain time, what are we thinking about at the same time? For example, if you want a turn on the slide and another child says you can't get in line, how do you feel? What are some of the things you could say or do? (After each suggestion, ask "What do you think would happen if you did (or said) that? What would you do or say then?" You may list possibilities and results to show that when we think of alternatives, we are also anticipating consequences.)

7. Is it always easy to make a decision? What things affect your thinking when you're trying to decide what to do? Do you think about what's going to make you feel good? Do you consider what is right? Do you think about what is good? Do you think about what will make your family, your teacher and other people you know feel proud of you? Do you think about what will make other people feel good? How about when someone you are playing with wants to do something you don't want to do? Or what about when your friends want you to join them and do something you know you shouldn't do? How does that make you feel?

8. Even when we think in advance about what we're going to do, does it always turn out well? What can happen? Does that mean we never decide about anything? Should we always let someone else tell us what to do and when? How about at school - when the teacher asks a question, do you think about it and raise your hand when you have an idea? Or do you wait to see what other children will say?

9. How do you feel and what do you do when someone else makes a decision for you and you don't agree? Do you ever try to understand the reasons for the decision? (If necessary, give an example, such as wearing a jacket when you think it's not that cold, turning off the TV and coming to the table when you want to see the end of a program, etc.)

10. How about times when you just don't know what to do about something? What can you do then? Is there anyone you can talk it over with? Who else? How can these other people help you decide something?

D. Activities

1. Any of the commonly used classroom activities may be employed:

   role play
   art, music, poetry
   room councils
   demonstrations and pictures
   games
   creative writing
   audio-visual experiences

   The above could be used to develop growing understanding and discussion on the topics presented in this unit. We have suggested a few stories that are planned for this kind of discussion in published materials. The teacher will readily see from these how other selections within her own curriculum might be extended along the same lines.

2. Use narratives and discussions:

   a. To promote responsibility:
      caring for materials
      keep savings account
      being on time

   b. To help teach kindness:
      caring for animals
      sending sympathy notes
      taking turns

   c. To teach honesty:
      returning lost articles
      admitting wrong doings
      asking for permission to borrow articles
      stories of American leaders such as "George Washington and His Hatchet"

   d. Propose a hypothetical situation in which the children must make a decision, e.g., have each child write his decision on a piece of paper telling why he made that decision.

   e. Have the child write a list of things that he believes. Each sentence must begin with "I believe that....." The best papers and possibly all of them may be summarized and displayed on a bulletin board.

   f. Have different children in your class tell about some of their experiences during the past few days which involved decisions they have made that helped someone else, in their family, the school, etc.

g. Have children write a story entitled, "If I Were You, and You Were Me." Have the child pretend that he is his father, mother, brother, or sister, etc. If he were one of these people how would he want me to treat him.

h. Make a bulletin board called "VALUES," with a string extending from the word "values" to each of the different kinds of values we may have. The children can help with the words. These can be changed or added to from week to week.

i. Read and discuss the following selections from A Teaching Program in Human Behavior and Mental Health, Books I-IV.

K "Tommy McTrott," Book I, p. 63.
1 "Eddie Learns to Be on Time," Book I, p. 93.
2 "The Second Grade Gives a Play," Book II, p. 24.
3 "Itocha," Book III, p. 57.
4 "The Cub's Picnic," Book IV, p. 45.

E. Resources

For Teachers:

1. Association for Supervision and Curriculum Development, Learning and Mental Health in the School. Washington, D. C.: N.E.A., 1966.
2. Association for Supervision and Curriculum Development, Perceiving, Behaving, Becoming. Washington, D. C., N.E.A., 1962.
3. Ojemann, R. H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health. Iowa City, Iowa: State University of Iowa, 1962.
4. Peters, Herman J., Shelley, Michael, and McCormick, Roger. Program for Elementary Guidance. New York: Random House, 1966.
5. TAMA, Division of Professional Productions, Inc., Minneapolis, Minn., 1967.
6. Williams, Dorothea. Health Science. New York: J. B. Lippincott Co., 1967.

For Students:

1. Beim, Jerrold. Swimming Hole. New York: Wm. Morrow & Co., 1951.
2. Stolze, Mary. Belling the Tiger. Evanston, Illinois: Harper & Row, 1961.

UNIT THREE

THE HUMAN BODY

Introduction

The purpose of this unit is to present the student with basic information on the human body and how it functions. A basic part will deal with the similarities and differences between the male and female body.

This unit contains seven lessons that are planned for primary school children. The following tabulation shows when each lesson may be introduced and emphasized:

LESSON	TITLE	GRADES K	1	2	3	4
One	How People Are Alike and Different	X	X	X	E	E
Two	The Five Senses	X	E	E	X	-
Three	The Skeletal System and Muscles	-	-	X	E	E
Four	The Circulatory System	-	-	X	E	E
Five	The Respiratory System	-	-	X	E	E
Six	The Digestive System	-	-	X	E	E
Seven	The Reproductive System	-	X	X	E	X

LESSON ONE

HOW PEOPLE ARE ALIKE AND DIFFERENT

Concept: All human beings have bodies that are basically alike in appearance and function; however, individuals differ according to sex (boy, girl--male, female), and within the sexes each person has certain characteristics that make him a unique individual.

A. Content

1. Every human being has a head, a trunk, arms, legs, hands and feet.
2. Every human being uses these parts of the body for the same purpose.
3. All people have external organs: eyes, ears, nose, mouth.
4. Males and females differ in their reproductive systems.
5. Each person is unique in coloring.
6. Each person is unique in size and shape.
7. Each person is unique in appearance, hair and eye coloring, features and size and shape of body.

B. Vocabulary

body
trunk
unique - being the only one of its kind
coloring - the outward appearance of skin, eyes, hair

C. Introductory Discussion

1. Let's look at each other. How are we alike? (Refer to picture: TAMA, Human Sexuality Education, page 53.)
2. How do we use these parts of our body in the same way? (Note to teacher: Stress the idea that all peoples of the world use their feet for walking, hands for grasping, head for nodding, etc.)
3. Let's look at each other. What is our coloring? How is it different?
4. How do we differ in size and shape?

D. Activities

1. Group all blonds, redheads, brunettes, etc., and have class discuss how they differ within each grouping.

8

2. Bring 4 or 5 children together to observe various heights within the class.

3. Using charts from TAMA, Human Sexuality Program, discuss with students how boys and girls are alike and different.

E. Resources

For Teachers and Students:

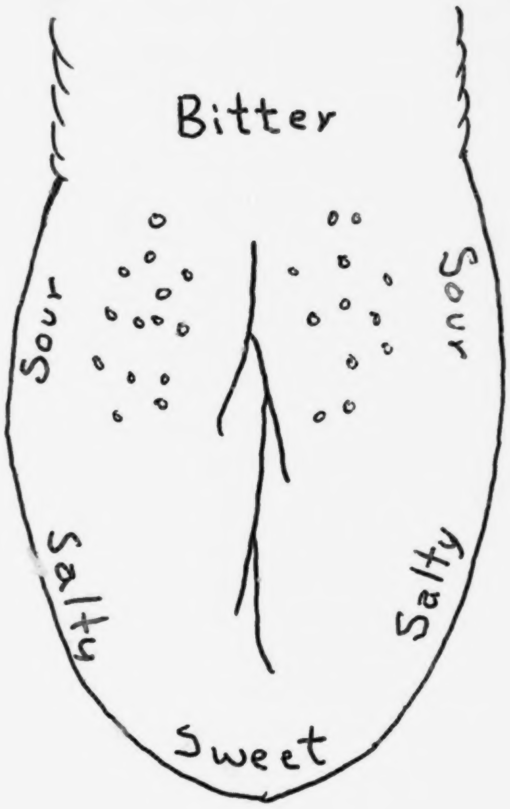
1. Gruenberg, B. C., and Gruenberg, S. M. The Wonderful Story of You. Garden City, N. Y.: Garden City Books, 1960.

2. Nourse, Alan E., and the Editors of Life, The Body, New York: Life, Time, Inc., 1964.

LESSON TWO

THE FIVE SENSES

Concept: All people have five senses that are controlled by the brain. They are sight, sound, touch, taste and smell.



A. Content

1. The eye is the organ that receives light rays and transmits the electrical impulses to the brain.

2. The ear is the organ that receives sound waves and transmits the electrical impulses to the brain.

3. The nose has cells that receive odor gases that in turn it transmits through olfactory nerve to the brain.

4. The tongue has taste buds which respond to the chemicals in food.

5. The sense organ for feeling is your skin. It has nerve cells or neurons that transmit the impulse to the brain.

B. Vocabulary

senses
impulse
transmit
neuron-nerve cell
spinal chord (illustrate by showing chart)
reflex action - a quick action without thought
taste buds - there are 9,000 of these little buds on your tongue which help you taste

C. Introductory Discussion

1. What are the five senses?

2. Why is the brain important to our five senses?

D. Activities

1. Use color blind tests.

2. Blindfold game - collect objects that are hard to identify. Blindfold a child. Have them take turns identifying objects by feeling, smelling and hearing.

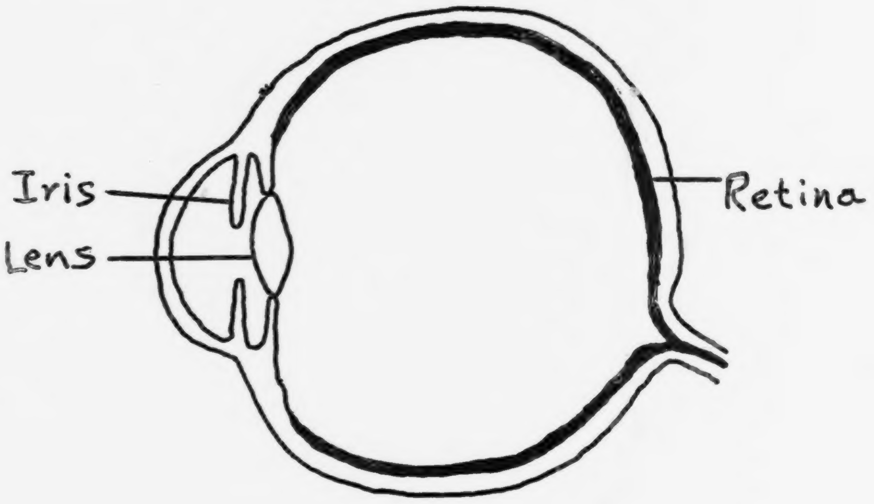
3. Loop a rubber band over door knob. Pull it and pluck it with your finger. You see the rubber band vibrate back and forth and hear the sound. Vibration is what makes the sound. Further experiment, put rubber band over various size boxes and listen to the different sounds.

4. What do you hear? A listening game - the teacher stands in the back of the room and has the children close their eyes. She makes various sounds and has the children identify the sounds. Example: Cutting paper with scissors, drop a pin, crumple paper, use sand blocks, etc.

5. What do you smell? Blindfold the child and have him identify different things by smelling. Example: perfume, peanut butter, pepper, shoe polish, apple, leather.

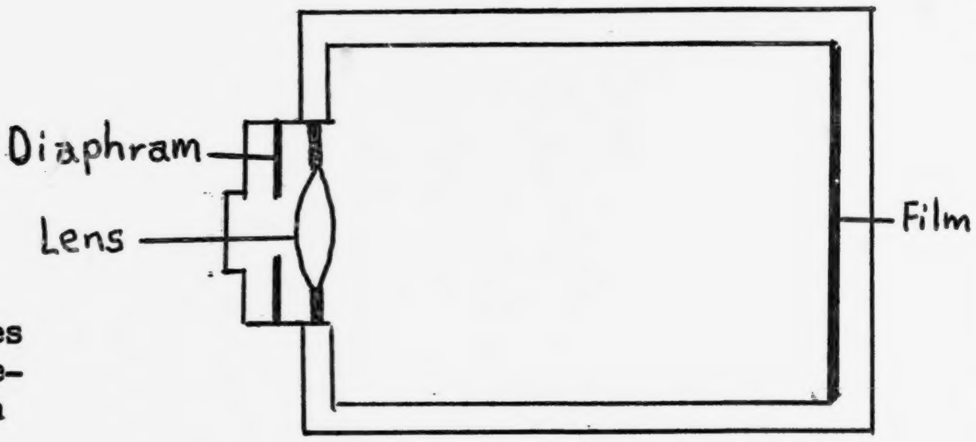
6. What do you taste? Blindfold the child and have him identify different foods.

7. Try this experiment. Blindfold the child and place an apple under his nose. Then give him a bite of a potato. He will think that he is eating an apple. (Note to teacher: This shows that taste and smell are closely related.)



8. Place objects in a bag and have children identify them by feeling and touching. Then have them draw a picture of what they think they felt.

9. An experiment on reflex action. Blindfold a child and touch him with an ice cube on the underside of his arm. You will note that he pulls his arm away quickly before he says anything. (Note to teacher: The sensory neurons of his skin flashed nerve impulses to his spinal cord causing the reflex action and then to his brain causing him to speak.)



10. Compare the two pictures presented here.

11. Discuss the care of the sense organs.

E. Instructional Aids

1. Color blind test.

2. Chart showing spinal cord.

3. Record: The Five Senses, Rowmar Records (10515 Burbank Blvd., North), Hollywood, California.

4. Films:

   See Better: Healthy Eyes
   Hear Better: Healthy Ears
   Our Senses: What They Do For Us

   Available from the University of Illinois Film Rental Service.

5. Filmstrips:

   Using Your Senses, Filmstrip of the Month Club
   You and Your Senses:
      You and Your Eyes
      You and Your Ears
      Your Senses of Smell and Taste
      Your Sense of Touch

   Available from Encyclopedia Britannica Films.

F. Resources

For Teachers and Students:

1. Gans, Roma, and Branley, Franklyn. Let's Read and Find Out Science Books. New York: Thomas Y. Crowell Co.:
   - Find Out By Touching
   - Flash, Crash, Rumble, and Roll
   - Follow Your Nose
   - High Sounds, Low Sounds
   - The Listening Walk
   - Look At Your Eyes
   - My Five Senses
   - My Hands
   - Your Skin and Mine

2. Goldsmith, Ilse. Anatomy for Children. New York: Sterling Publishing Co., Inc., 1964.

3. Gruenberg, B. C., and Gruenberg, S. M. The Wonderful Story of You. Garden City, N. Y.: Garden City Books, 1960.

4. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset & Dunlap, 1961.

5. Navarra, J. G., and Zafforoni, J. Today's Basic Science. New York: Harper and Row, Inc., 1967.

6. Schneider, Leo. You and Your Senses. New York: Harcourt, Brace & World, Inc., 1956.

LESSON THREE

THE SKELETAL SYSTEM AND MUSCLES

Concept: The bones and muscles interact and give the body its shape and form.

A. Content

1. 206 bones of different sizes and shapes form the body skeleton and protect important parts within the body.
2. The skeleton is the framework of the body; it provides support.
3. Movement would be impossible without a skeleton.
4. Bones change as they grow.
    a. As bones grow longer, we grow taller and bigger.
    b. As bones grow thicker, they can support more weight.
5. Bones consist of three main layers: the periosteum (tough outer layer), the compact bone (the second layer which is the strong part of the bone) and the marrow (spongy inner layer).

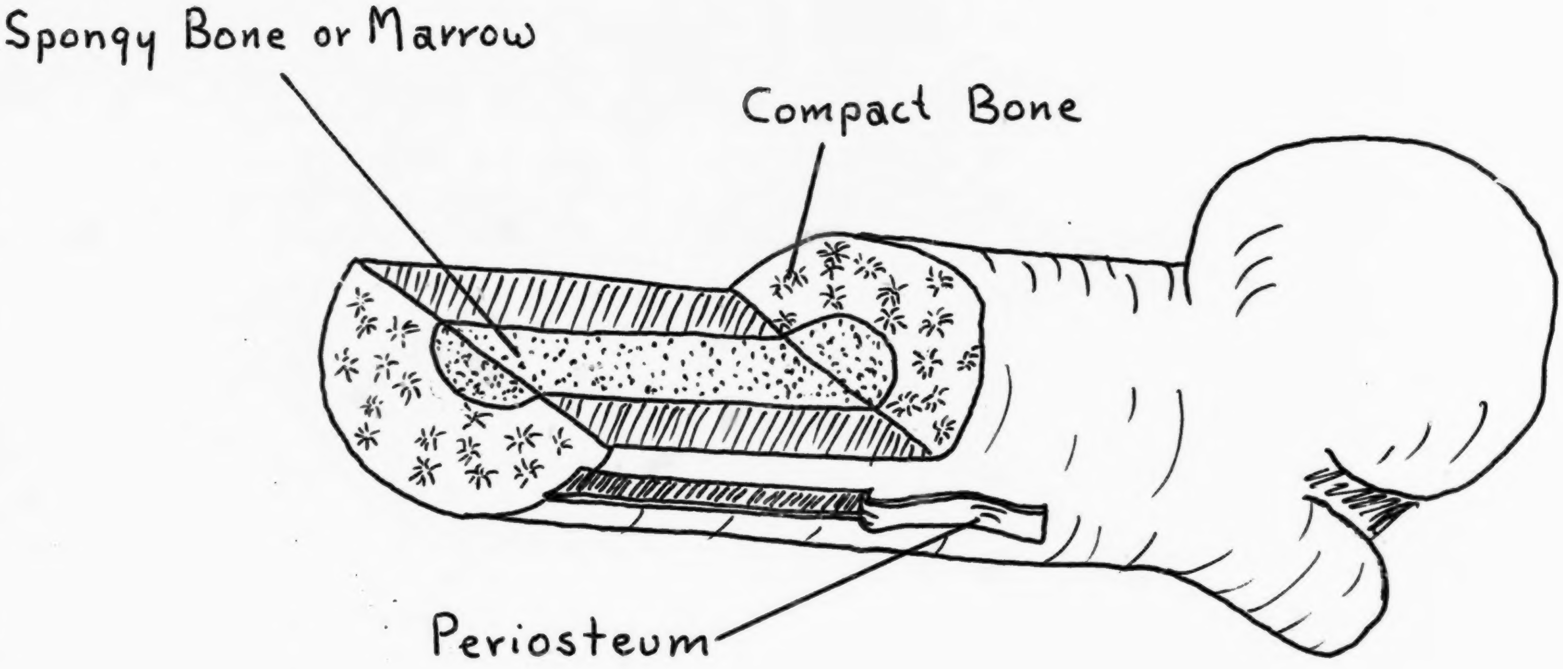


DIAGRAM SHOWING COMPOSITION OF HUMAN BONE

6. Babies' bones are soft because they're made mainly of gelatin.

7. Minerals make bones grow harder, as we grow older.

8. A joint is a place where bones come together.

9. The skull is composed of many bones joined together, and its main function is to protect the brain.

10. The backbone consists of a series of small, hollow cylinder-shaped bones called vertebrae.

    a. These bones are flexible and permit movement.

    b. The hole in the middle of the vertebrae is for the spinal cord, which leads to the brain.

11. The rib cage consists of the backbone, the ribs, and the chest bone (sternum).

    a. Its main function is to protect the lungs and heart.

    b. Movement of the rib cage aids in breathing.

12. The skeletal system consists of all bones in the body, their connecting cartilage and ligaments.

13. Muscles are attached to the skeleton and some are found within the walls of many inner body parts. (For example: the heart, the diaphragm, the walls of the intestines.)

14. Muscles shape the body, protect and move bones.

15. They move materials through the body (for example, food in the stomach and intestine is moved along by muscles).

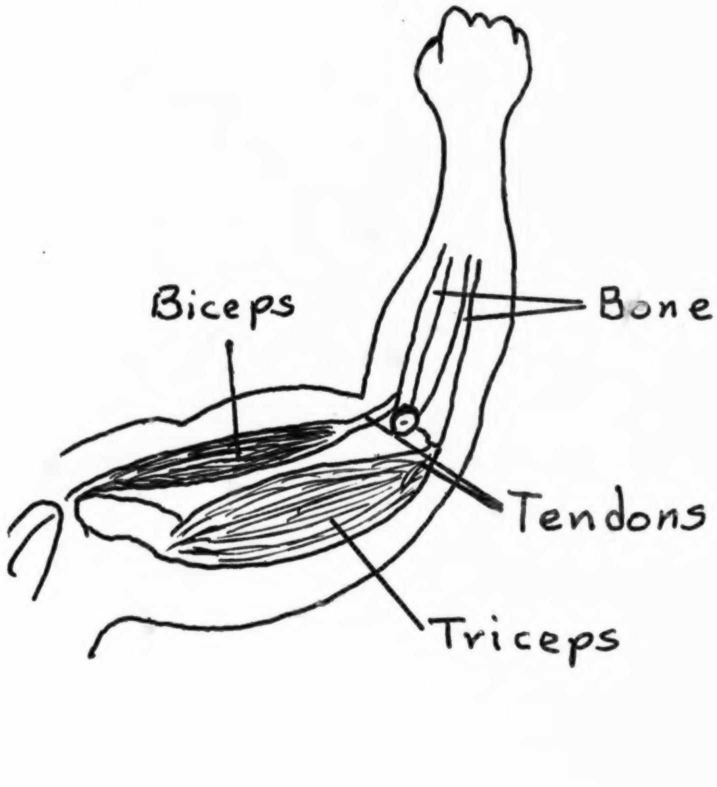
16. Muscles are stringy fibers found together in clusters.

17. At the ends of muscles are tendons which connect muscles to bone, skin or other tissue.

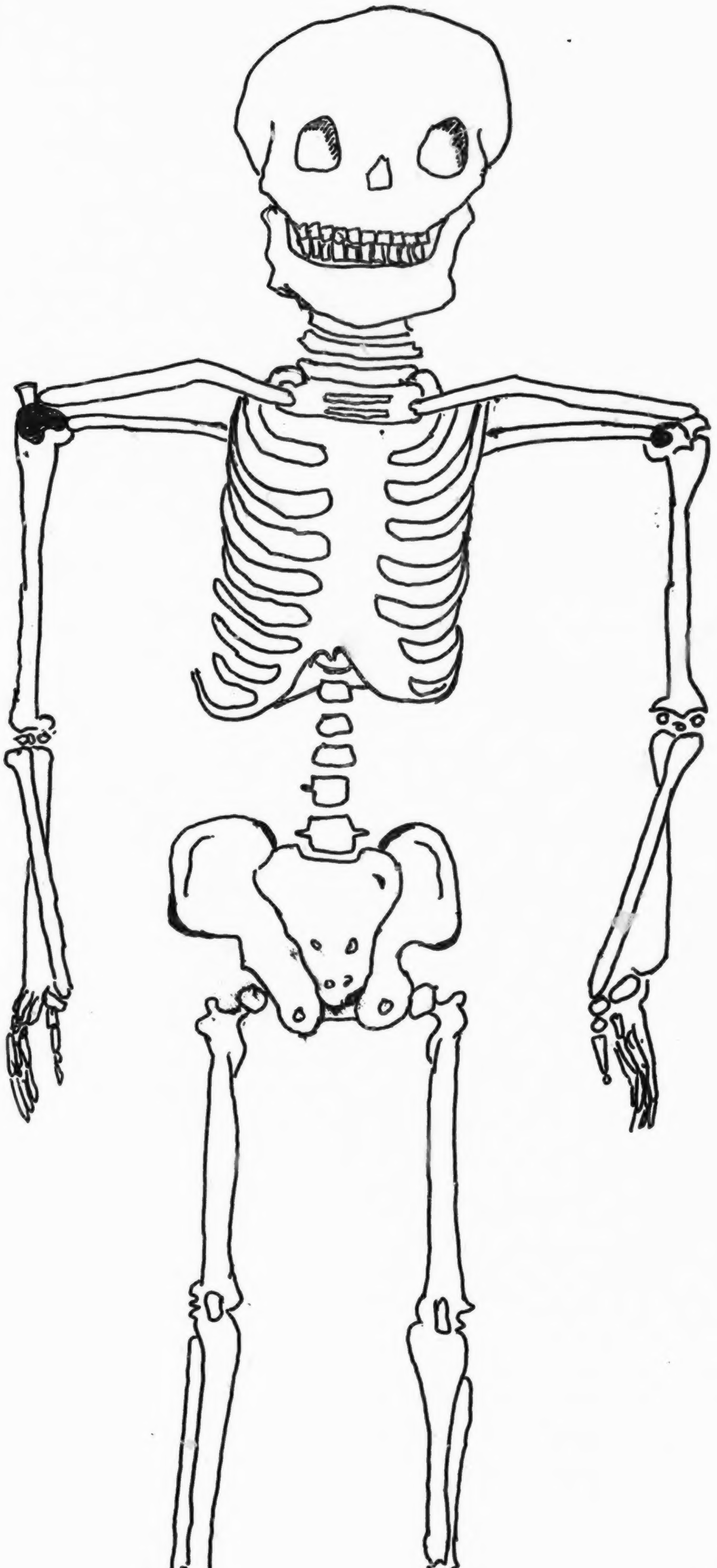
18. Muscles work together and change size and shape as they cause movement.

19. Muscles get bigger and stronger by repeated use.

20. All the muscles of the body and their tendons make up the muscular system.



THE SKELETON



B. Vocabulary

1. skeleton - framework of the body (bones = periosteum, marrow)
2. marrow - material filling inner space within a bone
3. backbone - spinal column
4. vertebra - one bone of the series that forms the backbone
5. cartilage - a tough elastic substance that forms parts of the body skeleton
6. ligament - a thick cord of tough, stringy tissue that holds bones together
7. ribs - curved bones of chest connected to backbone and breastbone
8. rib cage - is made up of bones of the chest
9. skull - the bones surrounding the brain and protecting it
10. muscle - body tissue that can contract or get shorter, in order to move different parts of the body
11. tendon - a tough cord of thick tissue uniting a muscle with another part of the body (for example: to a bone).
12. diaphragm - dome shaped muscle attached to lower ribs

C. Introductory Discussion

1. What would we all look like without bones?
2. In what ways do your bones help you?
3. How do your bones change as you grow?
4. What experiences have you had with broken bones?
5. Is the skull just one bone? How do you know it is not? (moveable - lower jawbone)
6. What is your rib cage?
7. Does your backbone feel the same as the bones in your arms and legs?
8. Why is it so important to have bones to shield and protect the heart and brain?
9. What covers bones? (muscles and skin)

10. How do muscles help you?

11. How do muscles work?

D. Activities

1. Have children observe movements of a baby and report findings with the class.

2. Trace outline of child on a large sheet of paper and fasten to bulletin board. Have children collect pictures of bones, muscles, and other organs and attach to outline.

3. Bring in cooked and cleaned bones or bones from butcher. Saw bones into halves and examine layers with magnifying glass.

4. Put one chicken leg bone in jar of water and another in jar of vinegar. Leave soaking for one week. Vinegar dissolves calcium in bone. The bone becomes rubbery, similar to an infant's. (Shows how important minerals are to make bones strong.)

5. Have children find examples of hinge joints by moving fingers, wrists, knees, and ankles, etc.

6. Demonstrate a ball and socket joint (Example: shoulder and hip).

7. Children should examine their upper arm, lower arm, and finger to tell how many bones they feel in each.

8. Have a child stand with his back to the wall to demonstrate that backbones are curved (S-shaped).

9. As a child bends have him feel how his backbone moves.

10. Place hands on your ribs. Breathe deeply and notice expansion and contraction of rib cage. Trace with hand ribs from backbone to chest.

11. Have children feel a few of the many bones (more than 200) and muscles (more than 600) there are in the body.

12. To hear a muscle working, listen to heartbeat (with stethoscope or rolled paper); to feel muscles working, take pulse.

13. Either look in mirror or feel face with hand. Notice muscular changes when you smile, frown, etc.

14. To demonstrate how muscles work in pairs, clasp upper arm while bending lower arm.

15. Invite a doctor to discuss bones and muscles with class.

16. Discuss poem, "Pondering Points on Posture."

Pondering Points on Posture

It's always so hard to remember
To sit tall and straight in my seat.
As far as that goes, I don't see me
To know if I really look neat.

I stretch and slump down and feel sleepy,
I move and reach out with my toes;
My neck has a strange prickly feeling
My back hurts; I look at the rows
Of children all sitting and working--
I'm tired of all this, goodness knows.

I'll just lean on my elbow a while now,
And play that my pencil's a star:
It taps out a rhythm and takes a deep bow--
Its fame has spread near and spread far!

There must be a way to sit still
That lets me forget how I feel.
Holding stiff is not really the answer--
I can't stay like that, it's not real!

I'll relax and be sure I don't sprawl,
No crossed legs, rounded shoulders or leaning
I know that won't help me at all!
My seat's meant for sitting: I'll use it,
My feet will be flat on the floor
My bones and my muscles will grow right
My breathing just right, and there's more:
I won't feel so tired when I'm finished
I'll feel great when I go out that door!

E. Instructional Aides

Films:

Muscles and Bones of the Body. Coronet Films.

Posture Habits. Coronet Films.

Filmstrips:

Introductory Physiology Series: The Bones and Muscles. McGraw-Hill, 1968.

Study Prints:

Parts of the Body. Encyclopedia Britannica, No. 5900.

F. Resources

For Teachers:

1. Byrd, Oliver E., Neilson, Elizabeth A., and Moore, Virginia D. Health. River Forest, Illinois: Laidlaw, 1966, Ch. 7.
2. Smith, Herbert A., Blecha, Milo K., and Sterning, John. Science 3. River Forest, Illinois: Laidlaw, 1966.

For Students:

1. Glemser, Bernard. All About the Human Body. Eau Claire, Wisconsin: E. M. Hale & Co., 1958.
2. Keen, M. The How and Why Wonder Book of the Human Body. New York: Grosset & Dunlap, 1961.
3. McGovern, Ann. The Question and Answer Book About the Human Body. New York: Random House, 1965.
4. Schneider, Herman, and Nina. How Your Body Works. New York: William R. Scott, Publishers, 1962.

LESSON FOUR

THE CIRCULATORY SYSTEM

Concept: The circulatory system supplies our body with needed materials, and carries away materials not needed.

A. Content

1. Our circulatory system consists of the heart and three different kinds of blood vessels called veins, arteries and capillaries.

2. The heart pumps the blood; the blood vessels carry blood to all parts of the body, bring food and oxygen, and take away carbon dioxide and other waste materials.

3. The blood is pumped out of the heart until it goes into tiny tubes (blood vessels) all over the body. The blood takes food and oxygen for all the living parts of the body and picks up waste material including waste gas (CO_2). Then it flows through veins, back to another pump in the heart.

4. Let us take some parts of the body and trace a tiny drop of blood as it is being delivered to and passes through that part of the body.

   a. Lungs. The blood is sent from the heart to the lungs, where waste gas is dropped off and fresh oxygen is picked up. The blood flows back to another one of your heart pumps, and starts a second trip around your body.

   b. Kidneys. The blood goes to the kidneys, where waste cell material is dropped off that was picked up from other parts of the body, along with some water, making urine that will be stored in the bladder until it passes from the body when we urinate.

   c. Intestines. The blood goes to the tiny tubes of the intestine to pick up digested food.

   d. Bones. The blood flows to a leg bone where it leaves some materials needed for making bones.

   e. Skin. -The blood now flows to all parts of the skin. Here it leaves food material and oxygen for your skin cells while at the same time, the blood picks up waste gas and waste cell material. (Mention protection).

   f. Liver. The blood also flows to the liver and leaves food material which is stored to use in the future. If you are working hard, in a few minutes this blood will pick up food from the liver and send it to the rest of your body.

g. Stomach Muscles. On another trip, this blood flows to the stomach muscles to give them the needed food and oxygen. Again the blood picks up waste cell material and waste gas from the stomach muscle cells.

h. Sweat Gland. In yet another trip the blood flows into sweat glands in the skin where it leaves water and cell waste to be sent out through pores in the skin.

5. Thousands of drops of blood add up to 4 quarts in the body. All of this blood passes through all living parts of the body without ever stopping. The blood not only does a big job in the parts we have mentioned, but all other parts of the body as well. The work of the blood is never finished.

6. A drop of blood is never the same from one second to the next as it flows past billions of cells.

7. In one place it picks up oxygen and gives off waste. In another place it picks up waste gas and gives off oxygen.

8. Blood is very busy in a very busy body as it travels thousands of times every day.

B. Vocabulary

oxygen
circulatory
kidneys
urine
bladder
gland
intestine
digested
waste
liver
cell

C. Introductory Discussion

1. Why does your heart beat? (pump)

2. What do we call the tiny tubes that carry blood?

3. What jobs does the blood do?

4. What happens to our blood supply if we keep donating blood year after year?

5. How do we help keep our blood healthy?

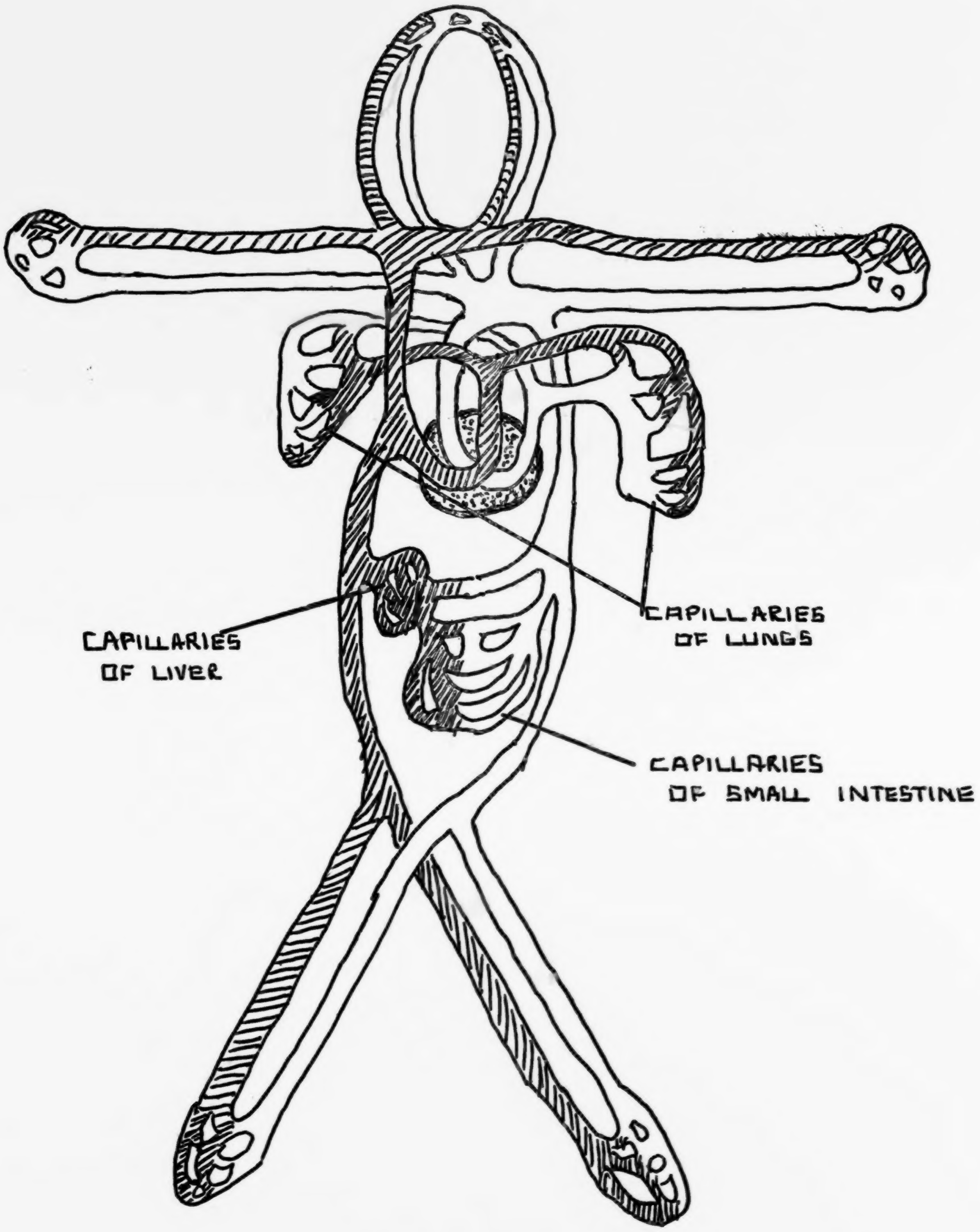
6. Does our brain need blood too?

7. Where does the brain get its oxygen?

D. Activities

1. Fill four one-quart containers full of water. Add red food coloring to each quart. This will show the children how much blood is in their bodies.

CIRCULATORY SYSTEM


CAPILLARIES OF LUNGS
CAPILLARIES OF LIVER
CAPILLARIES OF SMALL INTESTINE

2. Use a plastic human body with all its parts and explain the traveling of blood to the various parts.

3. Learn more about the blood by getting materials for your room. Encourage children to use library and learning center on the subject.

4. Assign each child to a different part of the body. Have them pretend that they are that part in giving their report to the class, telling what the blood does for them.

5. Fill a balloon with water, leaving the top open. Now squeeze the balloon hard. The water comes out in a spurt. This will give you some idea of how the blood is squeezed out of the heart.

E. Instructional Aids

Film:

Human Body - The Circulatory System. Available from the Audio Visual Service, Southern Illinois University, Carbondale, Illinois.

Charts:

Illustrating blood circulation.

F. Resources

For Teachers and Students:

1. Glemser, Bernard. All About the Human Body. Eau Claire, Wisconsin: E. M. Hale & Co., 1958.

2. Schneider, Leo. The Story of Your Circulatory System. New York: Harcourt, Brace and World, Inc., 1958.

3. Spingarn, Natalie D. To Save Your Life. Boston: Little, Brown and Co., 1963, pp. 122-134.

4. Weart, Edith L. The Story of Your Blood. New York: Coward & McCann, 1960.

LESSON FIVE

THE RESPIRATORY SYSTEM

Concept: The respiratory system supplies our body with oxygen and gets rid of carbon dioxide.

A. Content

1. We breathe in air and breathe it out again every minute of every hour all day and all night.
    a. Scientists call breathing respiration.
    b. Breathing out is called expiration.
    c. Breathing in is called inspiration.
2. We breathe thousands of times per day without thinking about it.
3. We breathe in air. Air is made up of many different gases.
    a. Nitrogen, oxygen and carbon dioxide are the three main gases in the air we breathe.
    b. The reason for breathing is to supply oxygen to the body cells and at the same time to get rid of the carbon dioxide which is produced when food is converted into energy.
    c. The air, made mostly of nitrogen, oxygen and carbon dioxide, has no smell or color. It cannot be felt unless it is moving.
    d. Air does have weight. This weight acts as pressure on us.
        (1) Air pressure pushes air into our lungs when the muscles of the chest make the lung space larger.
        (2) The pressure also helps oxygen to leave the lungs and go into the blood.
4. When we breathe the air passes through the nose and/or the mouth. Breathing through the nose is best for us because it cleans, warms and adds moisture to the air.
5. The air passes from the throat to the trachea (windpipe). The trachea is like a tube and is about 4 inches long and an inch wide.
6. The end of the trachea divides into two tubes; one goes to the right and the other to the left. Each of these tubes leads into a part called a bronchus. (Bronchi means two.)

7. Each bronchus divides into several branches and these enter the lungs.

8. The lungs are protected by the rib cage.

9. There are two lungs - a left and a right.

10. Muscles control expansion and contraction of the lungs for breathing in and out.

B. Vocabulary

respiratory
respiration
expiration (exhale)
inspiration (inhale)
lungs
pressure
moisture
trachea
bronchus
bronchi

C. Introductory Discussion

1. What is air?

2. How many times do we breathe per day?

3. What is the nose good for?

4. What makes us breathe faster at some times than others? Why?

5. Why do we need air pressure?

6. Why are muscles needed in breathing?

7. Do we think about when to inhale and when to exhale?

D. Activities

1. Use a paper or plastic bag to show the breathing process.

2. Have a child run around the playground once. Show the difference in breathing rate as opposed to the rest of the children in a rested state.

3. Have a child breathe on a piece of glass to show that the air we exhale contains moisture.

4. Obtain charts showing respiratory system. Have children identify various parts.

E. Resources

For Teachers:

1. Topeka Public Schools, A Teachers' Guide for Health and Safety Instruction in the Junior and Senior High School, Topeka, Kansas, 1968.

2. Weart, Edith L. The Story of Your Respiratory System. New York: Coward & McCann, 1964.

For Students:

1. Zim, Herbert S. What's Inside of Me? New York: Wm. Morrow & Co., 1952.

LESSON SIX

THE DIGESTIVE SYSTEM

Concept: The digestive system breaks down food into very small pieces through physical and chemical processes and enables the body to utilize food.

A. Content

1. The digestive system consists of the alimentary canal (mouth, esophagus, stomach, small intestines and large intestines) plus the liver and pancreas.

2. Digestion is important because

   a. The body cannot use food until it is digested.

   b. Food must be changed from its raw form so that it can be absorbed into the blood stream and distributed for nourishment throughout the body.

3. During digestion food is changed from a solid to a liquid by muscles churning, crushing and moving substances while digestive juices moisten and break them down.

4. Let us trace what happens to food as it travels through the digestive system.

   a. Mouth. Teeth chew, cut and grind food into small pieces which are mixed with saliva. The tongue lumps these pieces together so that they can be easily swallowed.

   b. Esophagus. Food then passes through a muscular tube called the esophagus, which contracts and relaxes to rush food down into the stomach.

   c. Stomach. In this sac-like organ, food is churned, while more digestive juices are added.

   d. Small Intestines. The greater part of the digestion of food takes place in the small intestine. More juices are added and the food, which is now in a liquid form, can be used by the body. The liquid passes into the bloodstream.

   e. Large Intestine. Semi-solid waste is stored here and finally disposed through the anal canal. Liquid waste is eliminated as perspiration or urine.

5. The blood carries food to cells all over the body to be used for energy, repair and growth.

6. Good eating habits are important.

   a. A good appetite helps us enjoy and eat enough food.

   b. The digestive system works better if it works regularly with rest in between and if mealtimes are calm.

   c. Food must be chewed well for proper digestion.

B. Vocabulary

digestive system
digestion
esophagus
stomach
saliva
intestines (small and large)
anal canal
urine

C. Introductory Discussion

1. Why does the body need to digest food?

2. How does digestion begin in the mouth?

3. What happens to food as it travels through the digestive system?

4. How can good eating habits affect digestion?

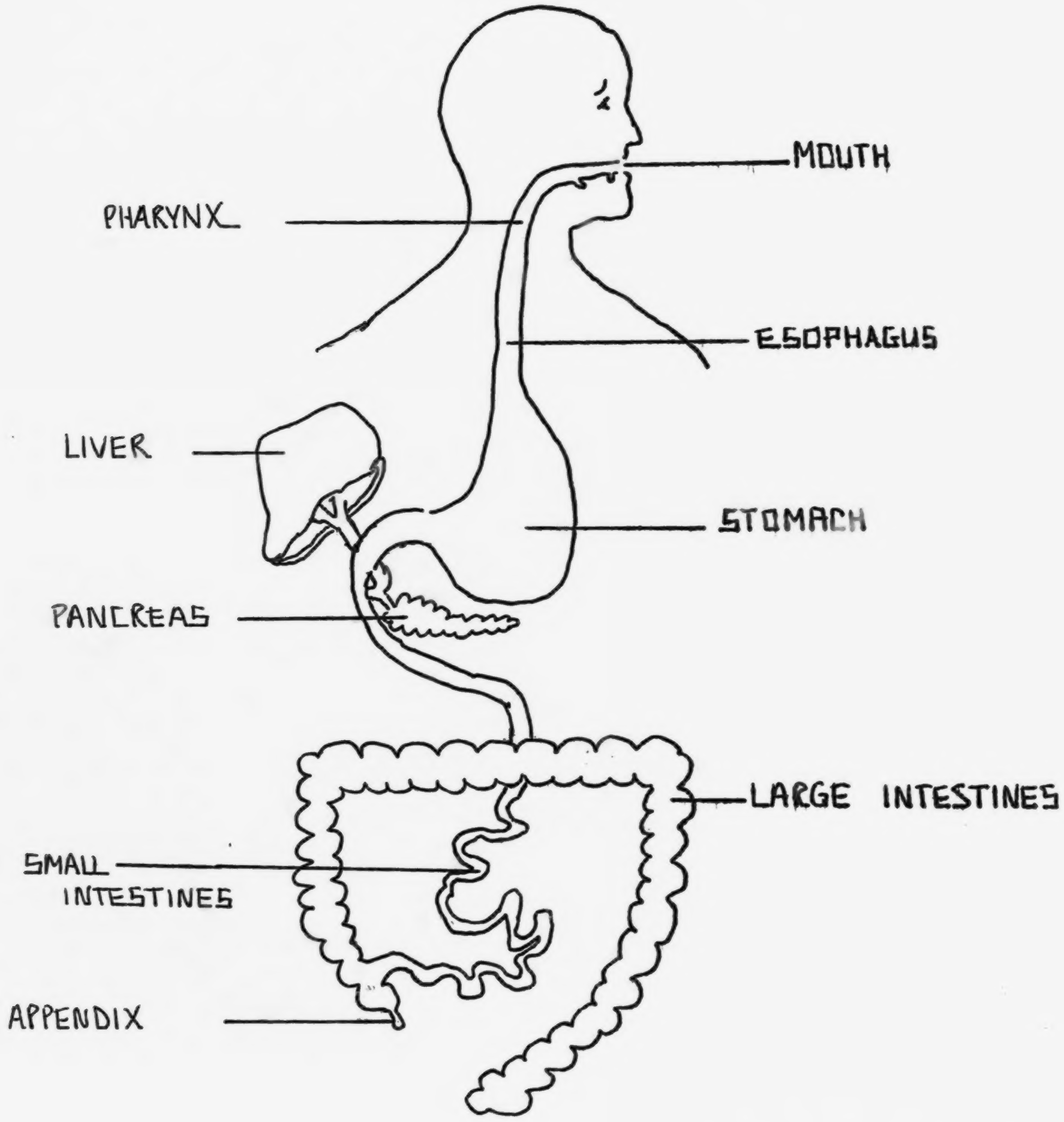
D. Activities

1. Examine with class a chart of the digestive system.

2. Experiment to show how esophagus pushes food down into stomach. Have one child stand upside down while a friend feeds him candy. He will be able to chew and swallow in this position.

3. Experiment to show how churning process in stomach speeds digestion. Place a piece of hard candy into small covered jars filled with equal amounts of water. Rock one steadily and let other stand. Candy that was moved dissolved more quickly just as swishing food in liquid within stomach dissolves faster.

4. Write play or act out skit about a child who is emotionally upset and how this affects appetite and digestion.


MOUTH
PHARYNX
ESOPHAGUS
LIVER
STOMACH
PANCREAS
LARGE INTESTINES
SMALL INTESTINES
APPENDIX

DIGESTIVE SYSTEM

5. Read and discuss the following poem:

Digestion Turns This Into That

Do you think that it's ever so simple
To eat a good steak and grow strong?
If you do, you had better just listen
And find out how much you are wrong!

Every bit of your sturdy young body,
All the parts you can see, and inside,
Are made up of very small sections
Called CELLS: in your bones, on your hide!

Now the reason for chewing your steak well
Is the taste--I knew you'd say that!
But I'm going to tell you some more now
About everything under your hat.

Cells could never use lettuce or ice cream --
You'd always just sit where you sat!
So you can move quickly, develop and grow,
Your food must be chopped, then dissolved:
Thank goodness you chew and you swallow
And have a good stomach to help:
It grinds up your spinach and carrots
With juices and mixes it well:
It changes that hot dog to GLUCOSE,
Then sends that to every small cell!

Your blood runs a pick-up and drop-off
To carry the usable food
To each little cell in your body,
No matter what day, or your mood.

E. Films

1. Digestion in Our Bodies. Coronet Films.
2. Your Food. Encyclopedia Britannica Films.

F. Resources

For Teachers:

1. American Medical Association, Today's Health Guide, the Association, 1965, Part III.
2. Byrd, O. E., Neilson, E.A., and Moore, V. D. Health, Book 4. River Forest, Illinois: Laidlaw Brothers, 1966, pp. 139=141.
3. Lawrence, T. G., Clemenser, J. W., Burnett, R. W. Your Health and Safety. New York: Harcourt, Brace and World, Inc., 1963, Ch. 10.

For Students:

1. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, 1961.

2. McGovern, Ann. The Question and Answer Book About the Human Body. New York: Random House, 1965.

3. Schneider, Herman, and Schneider, Nina. How Your Body Works. New York: William R. Scott, Inc., 1958.

LESSON SEVEN

THE REPRODUCTIVE SYSTEM

Concept: The life cycle of every living organism is: birth, growth and maturation, reproduction, aging, and death. Reproduction of organisms of the same species is a process of creation. Life reproduces life of its own kind.

Introduction

This part of the lesson is intended to provide teachers with basic information on the subject and how to teach it. The lesson is divided into three sections:

a. Plant Reproduction

b. Animal Reproduction

c. Human Reproduction

The teacher is advised to teach each section separately from the others, but continuity should not be lost. Preceding each section additional information is presented so that teachers may have ready access to detailed information.

It is very important that teachers understand the content well before attempting to teach this lesson. Another consideration is suitability of content to the general level of maturation of children. A class discussion, perhaps centering on pregnancy of a mother or birth of a baby, may lead to discussion of how babies are born. The teacher should recognize that children are not always interested in all the details of fertilization and birth. A simple question, "What do you mean?" by the teacher may help her gain perspective and enable her to answer children's questions. Simplicity, accuracy, and good taste are prerequisites for effective teaching. The authors of this program recommend that teachers familiarize themselves with the content and vocabulary of this lesson. Reading of the reference materials is necessary. Especially helpful for teachers and parents are the pamphlets published by the Illinois Social Hygiene League entitled: "Beginnings in Sex Education," and "Techniques for Teachers in Sex Education."

Vocabulary

1. A cell is the smallest unit of living matter. Every plant, every animal, and every human being is made up entirely of cells.
2. Asexual reproduction is cell division or fission.
3. Sexual reproduction is when the reproductive cells, the egg and sperm, unite to form new life.
4. Male is the one that carries the sperm cells.

Vocabulary (cont'd)

5. Female is the one that carries the egg cells.

6. Testicles are the two organs suspended in the scrotum or sac on the outside of the male which produce the sperm cells.

7. Penis is the male organ that discharges both the urine and the sperm fluid (semen). Discharge of the sperm and urine cannot take place at the same time.

8. Semen is the fluid which carries the sperm cell.

9. Ovary is the organ in the body of the female which produces the egg cells. Also, it is the enlarged lower part of a flower's pistil.

10. Uterus is the special place where the baby grows. It is also called the womb.

11. Vagina is the special passageway leading from the uterus to the outside of the body. The vagina muscles stretch to allow the baby to move through.

12. Menstruation. Approximately once in every 28 days an egg leaves the ovary. The uterus is ready to receive this egg. In the uterus a soft, spongy lining develops along the interior walls, and the blood vessels take on an extra supply of blood. This lining and blood will provide a comfortable place for the egg to grow. If fertilization of the egg does not take place this blood and lining is not needed. The extra blood trickles out, along with bits and pieces of the unused lining, through the opening of the vagina. This process is called menstruation.

13. Fertilization is when the sperm cell and the egg unite.

14. External fertilization is when the sperm and egg cell unite outside of the female body. Example: turtles and some fish.

15. Internal fertilization is when the sperm and the egg cell unite inside the female body.

16. Umbilical cord is the cord that is formed from blood vessels and carries the needed nourishment from the placenta to the baby. It is connected to the baby at the navel.

17. Placenta is a spongy mass of blood vessels formed in the uterus to nourish the developing baby. It is attached by the umbilical cord.

18. Navel is where the umbilical cord was connected to the unborn baby. You may call it your "belly button."

19. Pregnant is a woman who carries a developing unborn baby in her uterus.

20. Embryo is an unborn human or animal or plant in the early stages of its development. In plants, it is still within the seed case; in humans and animals it is still within the egg or the body of its mother.

Vocabulary (cont'd)

21. Breasts make the milk that feed a baby. Nursing or breast-feeding is the way some mothers feed their babies.

22. Reproduction is the producing of babies of the same kind.

23. Mating is when a male and female come together in order to reproduce.

24. Mammal is an animal that has breasts to feed its young. The word mama or mother comes from this word.

A. Plant Reproduction

Teacher Background:

a. Seeds. The main parts of a seed are the seed coat, the embryo, and the stored food. The protective cover is the seed coat. The embryo is a developing plant. It consists of tiny leaves, stem, and roots. The cotyledone is where the food is stored.

A seed grows into a new plant like the parent plant. Get the idea across that seeds have little plants inside of them.

b. A fruit is a ripened ovary, or the female reproductive organ of the flower. It contains ovules. When they are fertilized the ovules become seeds. This process of fertilization is called pollination. This can be done by insects, and wind that carry pollen from one flower to another, or from the male part to the female part of the apples, pears, cucumbers, acorns, a kernel of corn, etc. The fertilized ovules are what become seeds.

c. A runner is a slender stem that takes root along the ground thus producing new plants.

d. A shoot from one tree or plant fixed in a slit in another tree or plant to grow there as a part of it is called grafting.

e. The small beginning of a flower, leaf, or branch is called a bud.

f. A small shoot cut from a plant to grow a new plant is called a cutting.

In plants asexual reproduction takes place when a plant is produced without a seed such as a runner, or in using a cutting.

1. Content

Plants reproduce new plants like themselves in many different ways. Examples: seed, pollinization, runners, buds, grafting, and from cuttings.

2. Introductory Discussion

   a. Discuss ways in which plants are made or reproduced (seeds, runners, buds, grafting, and from cuttings).

   b. Discuss the fact that all seeds have embryos which reproduce plants like themselves.

   c. Why does a bean plant and not a corn plant grow from a bean seed?

   d. What things must plants have in order to grow? (Food, water, and air.)

   e. What other things help plants grow? (Temperature, sunlight.)

   f. Discuss how seeds contain food for the new plants.

3. Activities

   a. Give each child a lima bean seed that has been soaked in water overnight. Show children how to split the seed. Have them locate the new plant embryo, tiny leaves, stem, roots, and the outer skin or seed coat (this will peel off). Show them where the plant food is stored.

   b. Plant a marble, a stone, etc., and several seeds. Water daily and find out which of these things grow.

   c. Experiment with cuttings - ivy, coleus, and geranium. Experiment with tubers. Plant a piece of potato that has several eyes in a large pot. Little potatoes will grow in the soil. The eyes of the potato are embryos. Spring is the best time for this experiment. Observe an onion sprouting, or plant spring bulbs. Observe the lima beans' growth in several ways. Plant them in sand, soil, and water (roll a blotter or a paper towel to fit inside a glass, place beans between the glass and the paper, fill the glass with water to just below the seeds.) Vary light and water conditions of those beans planted in the sand and water.

   d. Have the children make and keep diaries of their experiments.

   e. Experiment with asexual reproduction by cutting off a stem of a coleus plant. Put the cutting in water. Place dark paper around the glass, and place the glass in sunlight. Take the paper off in a week and note the roots which have developed and you have a new plant ready to be planted in dirt.

   f. Experiment with the growing of mold. This is another example of asexual reproduction. You could use bread. Note the growth of the mold.

   g. Have a child pick out any vegetable and have him trace it from the seed cycle to the dinner table. Example: "I am a dill pickle. Let me tell you what I've been through since I started as a cucumber seed."

h. Have children collect as many different types of seeds as they can find. Observe difference, mount, and label.

i. Report on how seeds travel.

j. Draw diagrams showing the seed cycle.

k. Make pictures using different seeds.

B. Animal Reproduction

Teacher Background:

The simplest form of creating life is done by asexual reproduction. If water was taken from a pond and looked at under a microscope one could see tiny organisms reproduce simply by splitting themselves in two. This may happen several times a day. Each time it does happen there are two complete organisms in place of one, each organism is exactly like the one from which it came. This process of reproduction by splitting is called fission. The amoeba and paramecium are only two examples of this kind of reproduction.

Sexual reproduction - external. Fish may lay eggs in or out of the water. A female fish lays a huge number of eggs and any male fish can fertilize them by discharging its sperm cells.

When a female frog is ready to lay its eggs a male pours out sperm cells. The eggs and the sperm cells go into the water at the same time and most of the eggs become fertilized. The baby tadpoles hatch about nine days later.

Sexual reproduction - internal. In birds fertilization takes place inside the female's body. The eggs are laid and the embryo develops until the baby is ready to hatch. The chicken's egg takes about 21 days to hatch. Hatching eggs in an incubator is a good experience for children at any grade level. There are many good books and pamphlets available.

In mammals, fertilization takes place inside of the female's body. All female mammals have regular times when one or more ripe eggs leave the ovaries. If the egg is fertilized it passes into the uterus where it becomes attached to the wall and begins to develop.

Mice have four-day cycles in which a batch of eggs may be fertilized. Cows have twenty-one day cycles. Dogs have semiannual cycles, usually in the spring and fall. The number of eggs produced in different mammals varies. In horses, cows, elephants, and monkeys usually only one egg is produced, therefore only one offspring. In dogs and cats it varies. Cats may have from four to six kittens. Mice may have eight baby mice.

Once an egg is fertilized gestation begins. The time of gestation for a mouse is 19 days, dogs and cats take 63 days, a cow takes $9\frac{1}{2}$ months, and an elephant takes one year and 8 months. In the case of humans the period is nine months.

In mammals a change takes place in the uterus each time an egg leaves the ovary. The interior walls of the uterus develop a spongy lining. This lining helps form the placenta. The blood vessels take on an extra supply of blood. The uterus is making a comfortable place for the egg to grow into a baby. The baby receives its food and oxygen from the blood of the mother. These important elements (food and oxygen) are carried to the baby through a cord of blood vessels called the umbilical cord. This cord connects the placenta to the baby's abdomen at the navel. All female mammals have milk glands and are able to feed their young after they are born.

Many animals have a fixed routine of mating. Many female animals after mating are left alone to care for their young. In the case of some species the young are born and must care for themselves right from the beginning.

1. Content

Animals reproduce new animals like themselves in different ways.

a. Asexual

b. Sexual - male sperm cells and the female egg cell unite.

(1) External fertilization takes place outside the body.

(2) Internal fertilization takes place inside the body.

2. Introductory Discussion

a. Discuss asexual reproduction and fission.

b. Discuss, by using pictures and books, the fertilization of fish and frog eggs.

c. Discuss the fact that all living animals start as an egg and reproduce their own kind. Bring out the fact that fertilization is the meeting of the male sperm cell with the female egg cell.

d. What animals do you know of that hatch from eggs?

e. Do all eggs hatch? No. Only eggs that have been fertilized.

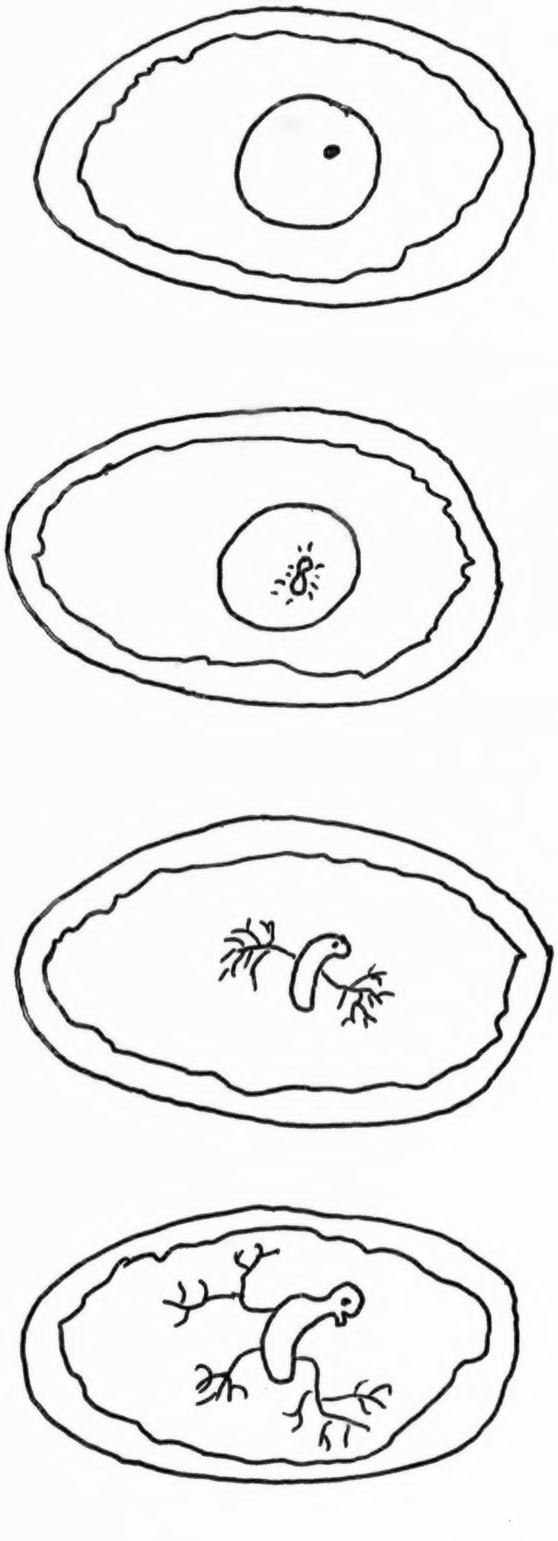
f. Explain how mammals grow from an egg cell inside the mother's body.

g. Where do baby mammals grow before they are born?

h. Where do baby mammals get their milk after they are born?

3. Activities

a. For an experiment in asexual reproduction in animal life, get a jar of pond water and observe the paramecia under a microscope. You will see the organisms swimming around. Observe the splitting in half of the organisms. This process is called fission. If unable to secure pond water, you could show pictures of this process.



FERTILIZED EGG OF CHICKEN

b. You could also show pictures of corals. Find pictures that show the budding process. A swelling of growth develops in the old organism. Soon it breaks off and becomes a new organism of exactly the same type. This is asexual reproduction by budding.

c. Using pictures explain how frog or toad eggs are fertilized. If possible, obtain frog eggs and observe the stages of development.

d. Find books which have pictures showing different kinds of fish eggs. Discuss reproduction and growth of these fish. Point out that when the eggs are fertilized the fish go their separate ways and the baby fish after they hatch must take care of themselves.

e. Have the children look at different types of cells under the microscope.

f. Have each child write a report on his favorite mammal.

g. Divide the children according to their interests and have them report on the life cycles of birds, reptiles, fish, amphibians, and mammals.

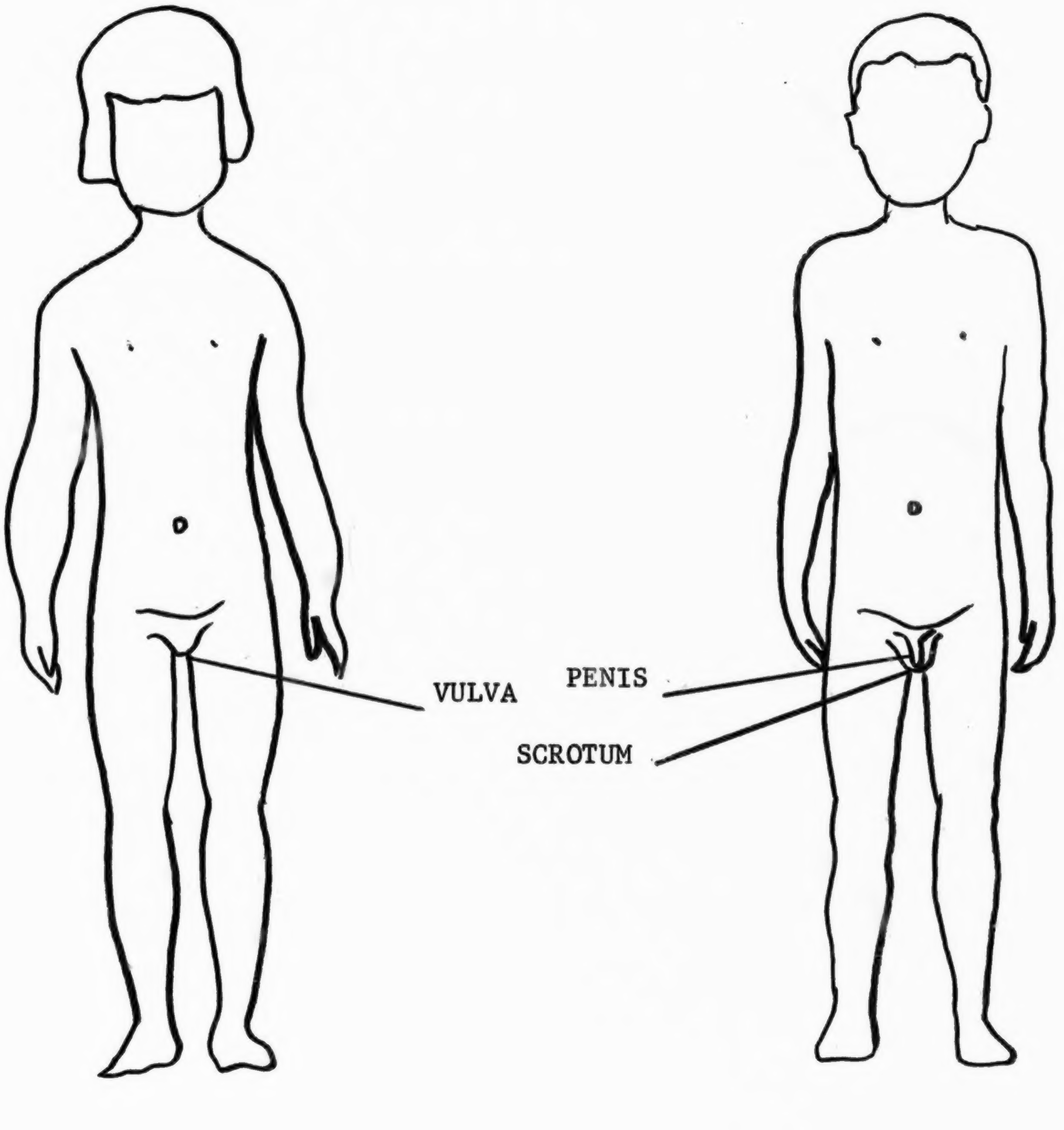
h. Hatch chicken eggs. Obtain a commercial incubator. Read directions carefully. Candle eggs or use pictures to observe growth of the embryo.

i. Have the children keep a picture diary showing how the chicken embryo develops.

j. Show the children as many pictures of animal mothers and babies as possible. Give the proper names of the male, female, and the young. (Example: Cat: male-tom; female-pussy; young-kitten.)

k. Tell the story of how baby mammals start. How long it takes before they can be born. Explain that each mammal is born in a membrane sac. The mother animal has the instinct to remove the sac, usually with her teeth. She then bites the umbilical cord. By licking with her tongue she starts the breathing process.

EXTERNAL SEX ORGANS


VULVA
PENIS
SCROTUM

C. Human Reproduction

Teacher Background:

Both males and females have parts inside their bodies which help them to produce babies. These parts are called sex organs.

The sex organs in the female include the ovaries which make the eggs and the uterus where the baby grows.

Every month an egg leaves one of the ovaries and travels down a tube leading to the uterus. The uterus has developed a spongy lining and an extra supply of blood has been made ready to feed the baby. Now the egg is ready to begin to grow into a baby, but only if it is joined by something very important called a sperm which comes from the father's body.

The sex organs of the male include the testicles which make the sperm cells. The sperm cells leave the father's body through the penis.

The tiny egg cell from the mother's body and the tiny sperm cell from the father's body unite. They become one new cell called a fertilized egg. It is this fertilized egg that becomes a baby.

Questions children might ask:

a. Where do babies come from? Answer: They grow in a special place called the uterus inside the mother's body.

b. How do babies start? Answer: Babies start from a tiny egg that is inside the mother's body (not like a chicken egg). When an egg cell inside the mother's body is joined by a sperm cell from the father, a baby will start to grow. Every baby must have a mother and a father to furnish both the egg cell and the sperm cell.

c. How does the sperm cell get from the father to the mother? Answer: "Folks who care for each other like to be close to each other. Husbands and wives often show their caring for each other by cuddling close together so their sex organs can fit together (make a diagram with your hands) and the sperm can be placed right inside the wife's body."[1]

d. How does the egg grow to be a baby? Answer: First the egg divides into two parts. Then these two parts divide again, they keep dividing and this is how the egg grows until the baby is ready to be born. Show pictures of the developing human embryo. The mother's body keeps the baby safe and provides nourishment for it.

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[1] Fitch, Franklin R., M.D. Beginnings in Sex Education. Chicago, Illinois: Illinois Hygiene League.

e. How does the baby get out of the mother? Answer: After the baby has grown for nine months, it is ready to be "born." The uterus has muscles that push the baby out through a passage called the vagina. This passage can stretch like the neck of a sweater. It allows the baby to move through it, and then goes back to its original shape. The baby usually comes out head first. The vagina passage is located between the mother's thighs.

f. How does the baby begin to breathe? Answer: As soon as the baby is born he gives a little cry. That is the way it starts breathing. From then on it can breathe all by itself.

g. What does a brand new baby eat? Answer: Babies may get milk from their mother's breasts or they may drink a special milk formula.

All humans are either male or female and come from parents that are also male or female. Cells from both parents unite to form new life. Use correct terminology for the parts of the body:

Female - external

Labia - outside folds of skin

Urethral - opening for urination

Anus - opening where waste products (feces) leave

Vagina - opening where sperm enters the body and through which a baby is born

Male - external

Penis - the organ which eliminates the urine and ejects the sperm cell

Scrotum - the sac that contains the testicles

Anus - opening where waste products (feces) leave.

Female - internal

Ovaries - where the egg cell is produced

Uterus or womb - the special place where the baby grows

Bladder - container for urine

Male - internal

Bladder - container for urine

Testes - where sperm cells are produced

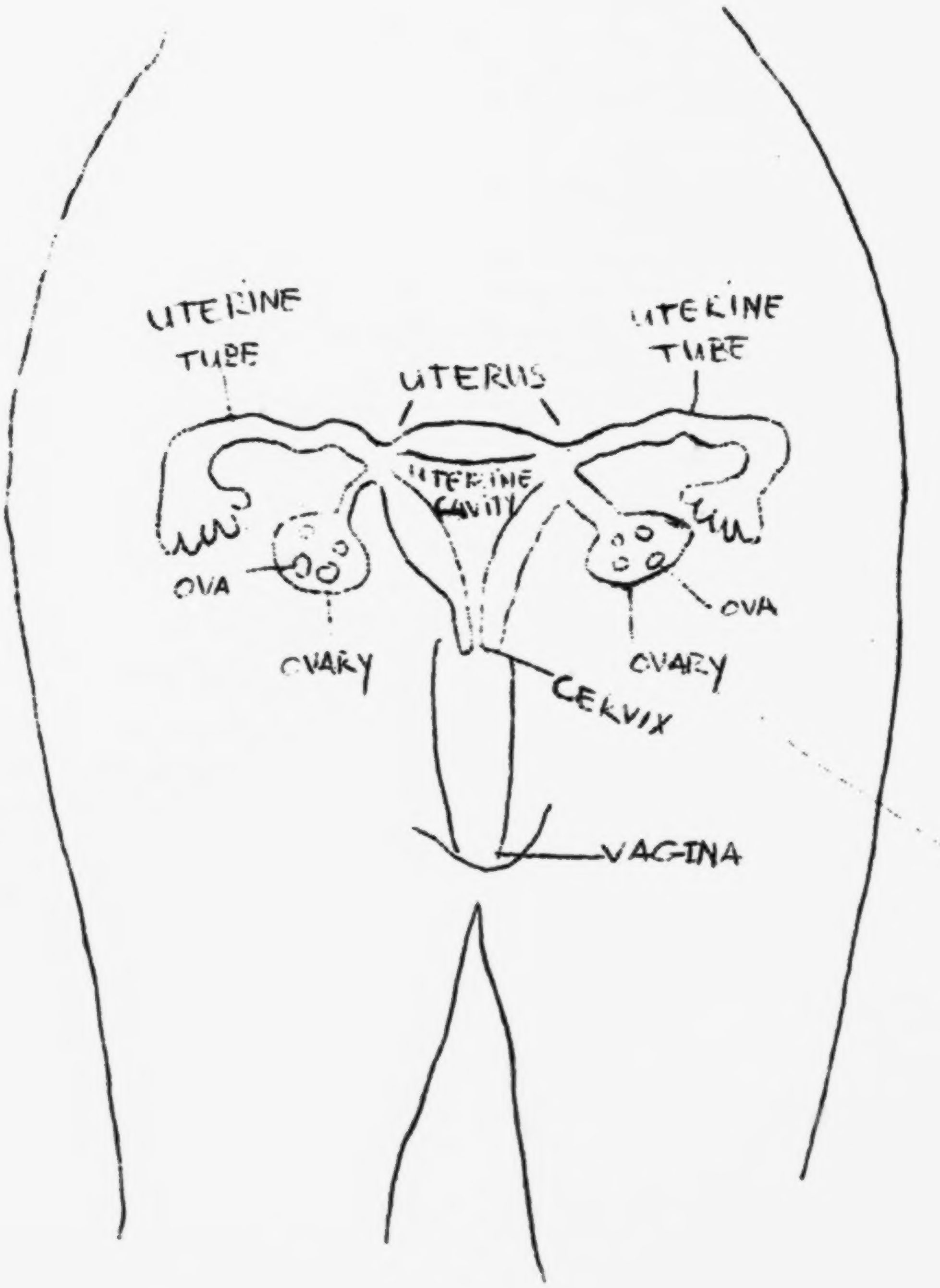
1. Content

   a. All living human beings come from other living human beings.

   b. The male reproductive system is made up of male gonads, or testes, which are located in a sac, the scrotum, and a tubelike penis.

   c. The female reproductive system is made up of female gonads, or ovaries, the oviducts, the uterus, and the vagina.

FEMALE REPRODUCTIVE SYSTEM


UTERINE TUBE
UTERUS
UTERINE TUBE
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OVA
OVA
OVARY
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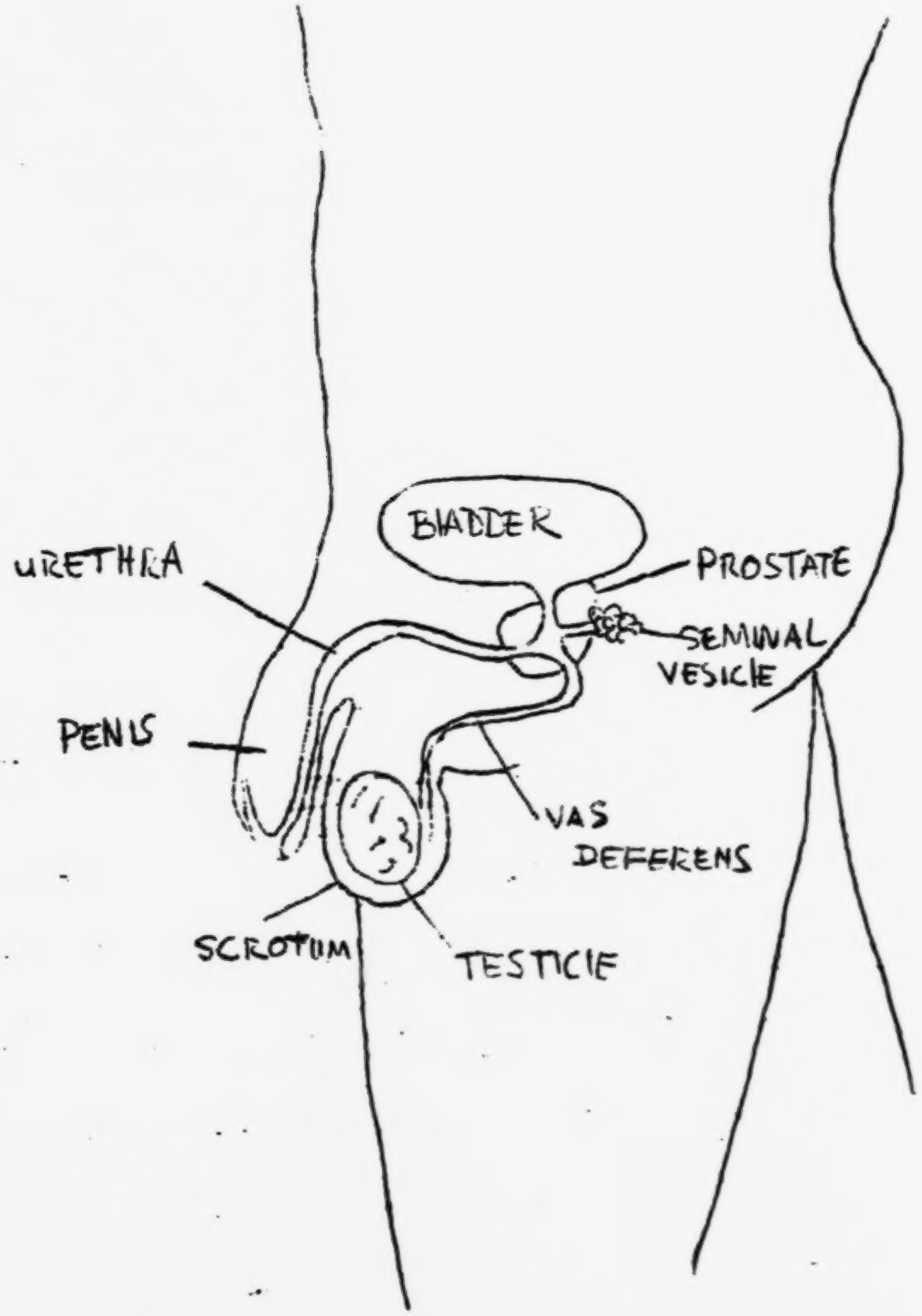
CERVIX
VAGINA

MALE REPRODUCTIVE SYSTEM


BLADDER
URETHRA
PROSTATE
SEMINAL VESICLE
PENIS
VAS DEFERENS
SCROTUM
TESTICLE

d. A male sperm cell must unite with an egg cell inside of the female body in order for a baby to grow. Note to the teacher: If the children ask, you may say that: Only when the male and female bodies are joined can the egg and sperm combine.

e. The baby grows in a special place inside the mother's body called the uterus, or womb.

f. While the baby is growing in the uterus, it gets its food and oxygen through the umbilical cord. After the baby is born the cord is not needed any more, so it is cut.

g. When the baby is ready to be born the muscles of the uterus begin to push the baby out through a special opening called the vagina. This is the same opening the sperm entered through nine months before.

h. When the baby is born it gives a little cry and that's when it starts to breathe.

i. The new baby brings much joy and many responsibilities to the family. (A new baby cannot survive without love and care.)

2. Introductory Discussion

a. If a pupil announces arrival of a new baby, this is an excellent opportunity to start a discussion on human reproduction. If this doesn't happen, ask the question, "Do any of you have a new baby brother or sister?"

b. Discuss the fact that all human beings come from other human beings, and that all people are either male or female. Point out the likenesses and differences of the two sexes (use diagram and transparency: How Girls and Boys Are Alike and Different, TAMA, Human Sexuality Program.

c. Use books and charts listed in teacher's resources to discuss the fact that a male sperm cell must unite with an egg cell inside the female body, and to discuss the development of the baby and its birth. (Be sure to use proper terminology.)

d. Discuss how a family changes to meet the responsibilities of giving the new baby the care and love it needs (see Unit I, Lesson 4).

3. Activities

a. If some pupil has a new baby at home, invite the mother to bring the baby to class. Have the children ask questions about the care of the baby and observe the baby's abilities.

b. Have the children bring baby pictures of themselves to school. Mount them and play a game to see if the children can identify each other by these pictures.

c. Discuss the fact that mother goes to the hospital to have the baby. Use either a toy telephone or a tape recorder to act out phone conversations with mother in the hospital.

d. Using a doll demonstrate how to hold a baby, bathe a baby, feed a baby, and diaper a baby.

e. Make a scrapbook of pictures showing different things babies can do.

f. Use charts Beginning the Human Story, A New Baby in the Family. Discuss as recommended.

g. Use the following resources to explain the story of human reproduction that is appropriate to your pupils' age and grade level.

D. Instructional Aids

1. Charts:

   a. Friche, Irma B. Beginning the Human Story, A New Baby in the Family. Glenview, Illinois: Scott Foresman & Co., 1967.

   b. Make transparencies from the charts contained in this lesson.

   c. TAMA, Human Sexuality Program, Division of Professional Productions, Inc., Minneapolis, Minn., 1967.

   d. Obtain more detailed charts from science books currently used at the junior high school level.

2. Filmstrips:

   a. Finding Out About Seeds, Bulbs, and Slips, Society for Visual Education.

   b. How Seeds Sprout and Grow Into Plants, EBF.

   c. Parts of a Plant, EBF.

   d. Exploring With Science, EBF: "Meet the Plant Family," "Meet the Animal Family," "Meet the Human Family," "Different Kinds of Animals," "Learning About Mammals," "Learning About Birds," and "Learning About Amphibians."

3. Films:

   a. How Does a Garden Grow, Film Associates of California.

   b. Learning About Flowers, Encyclopedia Britannica Films.

   c. How Plants Reproduce, McGraw-Hill. Available from C.I.C. Film Library.

   d. Wonders of Plant Growth, Churchill Films. Available from C.I.C. Film Library.

e. *Mother Hen's Family*, Coronet Films.

f. *Kittens: Birth and Growth*, Bailey Films.

g. *Looking at Mammals*, EBF. Available from C.I.C. Film Library.

h. *Looking at Fishes*, EBF. Available from C.I.C. Film Library.

i. *Life Story of the Paramecium*, EBF. Available from C.I.C. Film Library.

F. *Resources*

For Teachers:

1. Ames, Gerald, and Wyler, Rose. *The Giant Golden Book of Biology*. New York: Golden Press, 1961.
2. Bauer, W. W. *Health For All*, Jr. Primer, Books I, II, III, Glenview, Illinois: Scott Foresman, 1965.
3. Beauchamp, Wilbur L., and Challand, Helen J. *Basic Science Handbook, K-3*. Chicago: Scott Foresman, 1961.
4. Brandwein, Paul F., Cooper, Elizabeth K., Blackwood, Paul E., and Hone, Elizabeth B. *Concepts in Science*. New York: Harcourt, Brace and World, Inc., 1966.
5. Fitch, Franklin R. *Beginnings in Sex Education*. Chicago, Illinois: Illinois Social Hygiene League. Pamphlet.
6. Fitch, Franklin R. *Techniques for Teachers in Sex Education*. Chicago, Illinois: Illinois Social Hygiene League. Pamphlet.
7. Hobson, Laura. *I'm Going to Have a Baby*. New York: John Day, 1967.
8. Mann, Peggy. *That New Baby*. New York: Coward-McCann, Inc., 1967.
9. Navarra, John Gabriel and Zafforoni, Joseph. *Today's Basic Science*. New York: Harper & Row, 1967.
10. Power, Jules. *How Life Begins*. New York: Simon and Schuster, 1965.

For Students:

1. Blough, G. O. *Plants Round the Year*. New York: Harper and Row, 1959.
2. Eggleston, Joyce Smith. *Things That Grow*. Chicago: Melmont Publishers, Inc., 1958.
3. Gruenberg, B. C., and Gruenberg, S. *The Wonderful Story of How You Were Born*. Garden City, N. Y.: Doubleday, 1952.

4. Kumin, Maxine W., and Sexton, Anne. Eggs of Things. New York: G. P. Putnam's Sons, 1963.

5. McClung, Robert M. Mammals and How They Live. New York: Random House, 1963.

6. Podendorf, Illa. True Book of Animal Babies. Chicago: Children's Press, 1955.

7. Selsam, Millicent E. Animals As Parents. New York: William R. Morrow and Co., 1965.

8. Selsam, Millicent E. Seeds and More Seeds. New York: Harper and Row, 1959.

9. University of California Elementary School Science Project, WHAT AM I? Part I: How I Began, A Comparative Study of the Development of Human and Chick Embryos. Berkeley: University of California Printing Department, 1963.

10. Wittram, H. R. My Little Brother. New York: Holt, Rinehart and Winston, 1963.

UNIT FOUR

HABITS OF HEALTHFUL LIVING

Introduction

One of the main objectives of this program is to establish in the learner certain habits of living. Cognitive knowledge alone is not enough in achieving this goal. As teachers discuss the content of this unit with their students, they should attempt to develop positive attitudes toward their health. Good habits of eating, grooming, and exercise can then be established.

It is recommended that the four lessons in this unit be introduced and emphasized according to the following table:

		GRADES				
LESSON	TITLE	K	1	2	3	4
One	Nutrition	X	X	X	E	E
Two	Exercise, Physical Fitness, and Rest	X	X	X	X	E
Three	Cleanliness, Clothing and Good Grooming	E	E	E	E	E
Four	Safety	E	E	E	E	E

LESSON ONE

NUTRITION

Concept: Food selection must be based on an understanding of general body requirements.

A. Content

1. We need to eat a proper amount of certain foods every day to give us energy and help us grow.

   a. Some foods build and repair our bodies, e.g., milk, meat, cheese, fish, peanuts - proteins.

   b. Other foods give us energy and keep us warm, e.g., sugar, potatoes, corn, bread, rice - carbohydrates; cheese, butter, bacon, milk, olive oil - fats.

   c. Some foods help keep our bodies working properly and help keep us well, e.g., carrots, salt, oranges, pumpkins - minerals and vitamins.

   d. Water helps carry food through our system. It also helps keep us at just the right temperature.

2. Review the study of the digestive system developed in Unit Three, Lesson Six.

3. Eating the foods we need affects our feelings of comfort and energy.

   a. When we eat enough of the foods we need we don't even think about it until it's time to eat again.

   b. Sometimes we don't eat enough of the right kinds of foods.

      (1) When this happens, we may have unpleasant physical feelings such as hunger, stomach ache or headache.

      (2) Hunger may keep us from doing our best at play or work; we feel weak or we can't think straight.

      (3) Hunger affects the way we get along with others. We may not feel like doing what we are expected to do; we may talk and act unpleasantly to those around us.

   c. Sometimes we eat too much food.

      (1) We may then feel uncomfortable for a while.

      (2) We may feel lazy and want to sleep, or we may not want to play or work.

(3) This may bother others if they want us to work or play.

(4) We may gradually gain too much weight.

d. We learn to like and dislike different foods.

(1) We learn some special tastes from our parents and other people who live with us. We learn to like or dislike certain foods from our friends and neighbors. We also learn to eat these foods in special ways.

(2) In many areas of the world people learn to like the foods they can buy and cook. Examples: cheese in Wisconsin, berries in Michigan, rice and fish in China, etc.

(3) Scientists are finding better ways of processing and preserving food. We now can choose from many kinds of food available to us almost any time from all over the country and from abroad.

(a) Different individuals and families like different kinds of food.

(b) Many special skills are used in making food products: farming, processing, shipping, cooking, writing books, and selling.

e. We have to help decide for ourselves what foods to eat and how much - for our own good health and good feelings.

(1) We need to learn about foods and digestion.

(2) We need to learn that different people have different needs and can eat different amounts of different foods.

(3) As we learn about our own needs and amounts of certain foods we can eat, we develop a better judgment about what foods and how much we should eat.

4. Whether or not most people in a group are eating enough of the foods they need affects the way the group gets along.

a. If most people are eating well in a family, a school class, a town, or a nation, the people are free of worries about food, and this helps them to work and play at their best.

(1) Our parents try to provide enough food and the right foods for us to eat.

(2) Our schools try to teach us what good foods are and how our bodies use food.

(3) Many people have jobs which have to do with seeing that you get the foods you want and need:

Production and supply
Community health organizations
Federal research
Developments of new food products
International relations - WHO, FAO, etc.

b. If most people in a group don't have enough food, it's difficult for them to work and play well together.

c. If most people in a group are in the habit of eating too much, the group has other kinds of problems.

(1) Reduction of energy after meals.

(2) When people are overweight they find it difficult to work and play at their best.

B. Vocabulary

digestion
digestive system
energy
proteins
carbohydrates
fats
minerals
vitamins
physical
food processing
preserving

C. Introductory Discussion

1. Who decides what you'll eat?

2. What reasons does your mother, the cook, the school dietician, or the restaurant owner have for selecting various foods? (nutrition and appeal).

3. First let's look at foods that are "good for you." What do we mean by that? (Develop food groups according to needs for growth and energy. This could be done in one lesson or in many, depending on the level of the children and intentions of the teacher.)

4. Do you look forward to eating?

5. What happens when you are in a hurry?

6. How do you feel when you come to school without your breakfast?

7. What would happen if you did not eat "good food" for a month? for a year?

8. What would happen if most people in one town did not eat "good food" for a month? for a year? for many years?

9. Are mealtimes always happy times for you? What keeps them from being happy?

10. Do you sometimes eat foods that you really don't like? What reasons do you have for that?

11. What do you think makes you like some foods best? What do you think makes you dislike some foods that are good for you?

12. How does your body use food for growth and energy?

13. Do all foods do the same things? (Some foods we like to eat are largely useless for growing or energy. Most foods, though, do contribute to growth and/or give us energy.)

D. Activities

1. Start a chart as a group activity showing foods we get from plants: vegetables, fruits, grains, etc. Start another chart showing foods we get from animals: meat, poultry, fish and dairy products. Have another one for manufactured foods from plant and/or animal products. The children can cut out small pictures to be pasted on the large chart. Continue adding from day to day to these charts.

2. Play "cafeteria," and discuss reasons for choosing various foods.

3. Start a diorama of a supermarket using cardboard cartons. Again children may find pictures to "stock" or make and cut out drawings. Use cardboard for three-dimensional effects of aisles, counters, freezers, etc. This also may be added to by the children as the unit progresses and they find and make more pictures.

4. Start a panorama on table top using construction paper, clay - town, as well as country - start with farm, ranch, truck garden, city housing, small grocery, supermarket in shopping center, small neighborhood grocery store. Have children make black and white labels for everything. (This could be an on-going project to be added as the unit progresses. If interests exist in old-fashioned farm and/or country store, encourage some to find out more and perhaps make dioramas of these.)

5. Field trips to a neighboring farm or food processing plant.

6. Dramatize the marketing chain: e.g., a farmer raises animals, and takes them to market - or has someone else take them; after processing, the meat is delivered to a grocery store and a butcher cuts it up into different cuts we use; people buy them and take them home; someone prepares the meat for a meal and a family sits down to eat.

7. Identify the presence of starch in foods. (e.g., potato will turn dark when a few drops of iodine are dropped on the potato.)

8. Have children make a study and report on milk-giving animals all over the world.

E. Instructional Aids

Charts:

1. The Milk Foundation Education Service Department (28 East Huron Street), Chicago, Illinois:
    a. It's Always Breakfast Time Somewhere - Wall chart.
    b. K-4 Teaching Suggestions - Leaflets and wall chart.
2. American Institute of Baking (400 E. Ontario Street), Chicago, Illinois:
    a. Wall chart including four food groups.
    b. Map your food.

Filmstrips:

1. Society for Visual Education (1345 Diversey Parkway), Chicago, Illinois:
    a. How Foods Are Used in Your Body
    b. Let's Stand Tall

Films:

1. Why Eat Your Vegetables? Coronet.
2. Foods That Build Good Health, Coronet.
3. Your Food, Young America Films.

F. Resources

For Teachers:

1. Byrd, O. E., Foster, J. C., Bolton, W. W., and Niedi, J. S. Health Today and Tomorrow. River Forest, Illinois: Laidlaw Brothers, 1966.
2. Topeka Public Schools. A Teachers' Guide for Health and Safety Instruction in the Junior High School. Topeka, Kansas: 1967.
3. Zim, Herbert S. Your Food and You. New York: William Morrow & Co., 1957.

For Students:

1. Follet, Robert. Your Wonderful Body. Chicago: Follet Publishing Co., 1961.

LESSON TWO

EXERCISE, PHYSICAL FITNESS AND REST

Concept: There is a rhythm of movement and rest in our lives which we try to understand in terms of individual needs and other influencing factors for optimum growth, development and productivity for each person and for society.

A. Content

1. People need regular periods of exercise, the practice of using our bodies physically.
    a. We can perform a set of exercises which will help develop our bodies and keep them in good working order.
    b. We usually think it is more fun to play games in which we walk and run to keep our bodies strong and to aid in our physical development.
    c. When we have the proper amount of exercise, we feel well. If our bodies are "fit," we are better able to do our best and more thoroughly enjoy all kinds of work and play.
    d. Not all people require the same amount of exercise. Not all people equally enjoy physical exercise.
    e. It is probably true that most of us do not get as much exercise as we should.
        (1) Sometimes we feel lazy about getting started, even though we expect to have a good time playing an active game.
        (2) If we aren't good at certain activities or games, we may not look forward to them.
    f. We can help our attitudes toward such activities and games in several ways.
        (1) We can get instruction in various physical activities and games.
        (2) We can practice the skills needed for success in them.
        (3) We can learn to accept the fact that our skills may not be as great as those of others, but we still can enjoy games.
2. We need regular periods of rest from any activity.
    a. Our need for rest changes from time to time.
        (1) According to health and general physical condition.

(2) According to level of interest. People feel they can continue an activity if they are interested in it.

(3) Sometimes we may be forced to continue an activity beyond a sensible time and find that we aren't doing our best - in fact, may do very poorly because of a need for rest or at least a change of activity.

b. Review importance of exercise in relation to circulatory and respiratory systems (Unit Three, Lessons Four and Five). Also emphasize importance of correct, relaxed, comfortable posture for proper development of bones, muscles, breathing, and as a way to avoid fatigue.

3. All people need regular periods of sleep.

   a. Our bodies and our minds need rest. Scientists think that helpful chemical changes take place while we are asleep.

   b. Scientists also tell us that our minds, through dreams, help us to solve problems and work out our feelings about many things while we sleep. We dream briefly only a few times during the night - most of the time our minds are resting.

   c. Different people need different amounts of sleep, and one person does not always need the same amount.

   d. We need to understand our own requirements for exercise, rest and sleep and make sensible decisions about getting the amounts of each that will help us feel and act our best.

B. Vocabulary

physical development (4th grade only)
exercise
games
activity
condition (3rd and 4th grades)

C. Introductory Discussion

1. What do we mean by exercise?

2. Would you rather touch your toes or play kickball?

3. What reasons do we have for playing games and doing physical exercises?

4. What might keep us from doing these things?

5. How long can you do exercises or play a game?

6. How often do you need to rest when you are playing hard?

7. Is it better to practice a short period of time every day, or all day once in a while? e.g., Little League.

8. Why do we have breaks in games such as football, basketball, hockey, etc.?

9. What other reasons do you have for resting?

10. Do you feel relaxed and tired after a swim?

11. Do you ever go on doing something when you don't want to or you feel tired? Do you sometimes have good reasons for keeping on after you're tired? Is it always a good thing to keep on after you're tired? What might happen to you if you keep on doing something too long? How about the work or play that you're doing?

12. Is good posture important only when you stand? How does the way you are sitting affect your feeling of being tired? How does posture affect the way your bones and muscles develop? Your breathing?

13. How much sleep do you usually get at night? (Let's figure it out. When do you ordinarily go to bed? When do you usually get up?)

14. Who decides when you'll go to bed? Do you always go right to sleep when you go to bed? What things do you usually do just before you go to bed?

15. Who or what wakes you in the morning? Do you always get up when you plan to? What happens when you get up earlier than usual? Later than usual?

16. Why do people sleep? Does everyone need the same amount of sleep? Do babies, children, young adults, older adults, very old people need the same amounts of sleep? How about children your age? Do you think there's a certain number of hours you all should sleep every night?

D. Activities

1. Have children keep a daily chart of their own sleeping hours. Record the time they get up in the morning and the time they go to bed at night.

2. The classroom teacher may work in conjunction with the physical education teacher in developing individual physical fitness charts. These charts should not be posted in the room or elsewhere as a rating chart or scale in any form.

3. Cut out articles and pictures from magazines to make folders, bulletin boards, etc., illustrating good habits for exercise and rest.

4. Take pictures of individual children who are performing an exercise, such as jumping jacks, push-ups, running, toe touch, leg raisers, etc. Put these pictures on a bulletin board.

5. Children may do individual research projects in a particular area of exercise.

E. Instructional Aids

Films:

1. Sleep for Health, Encyclopedia Britannica Films.

2. Posture Habits, Coronet Films.

F. Resources

For Teachers:

1. Illinois Curriculum Program, Subject Field Series, Health and Safety Plays and Programs. Springfield, Illinois: Office of Superintendent of Public Instruction, 1965.

For Students:

1. Selsam, Millicent. How Animals Rest. William R. Scott, Inc., 1953.

LESSON THREE

CLEANLINESS, CLOTHING AND GOOD GROOMING

Concept: Regular habits of cleanliness and appropriate dress are important for our feelings of comfort and well-being.

A. Content

1. For our own best feelings and for the sake of others, we try to keep ourselves dressed appropriately and reasonably clean and neat.

   a. We bathe and wash regularly and dress according to what we plan to do.

      (1) When we go to bed at night we follow cleanliness routines.

      (2) When we get up in the morning or get ready to go somewhere, we follow cleanliness routines.

      (3) We wear different kinds of clothing, depending on what we're planning to do, where we are going, and what the weather is like.

      (4) We feel better if the clothes we wear fit us, and are comfortable and appropriate.

   b. We enjoy associating with others who are neat and clean, and they feel that way about us, too.

   c. Keeping ourselves, our clothing, our furnishings and other things we use clean and in good repair is one way of helping keep ourselves healthy (see Unit Five).

   d. Our communities and our nation are working to combat water and air pollution and to encourage programs of conservation of other national resources.

2. Even though we might start out clean, we often do things that get us and our clothes dirty. If we're dressed for what we're doing, we expect that, and so does everyone else. It's all right to enjoy yourself and go ahead and get dirty!

3. Many things influence our taste in dress and grooming:

   a. Different nations have different customs.

   b. Climate is an important thing to consider, including weather at the moment.

c. Even in a certain area, different families may not agree on all the details of cleanliness, clothing and grooming.

d. The resources of the area and the personal resources of the family (income) are also important influences.

e. Within the limits of custom and what is available to a person, he still has frequent occasion for decision and choice about his own habits and clothes.

B. Vocabulary (Grades 3 and 4 only)

appropriate
occasions
routines
associate
decisions
appearance
influence
customs
resources

C. Introductory Discussion

1. What reasons can you think of for taking a bath? Washing your hands and face? Changing your clothes? At what times do you usually take a bath? wash? change clothes?

2. How do you go about taking a bath? (If desired, develop a chart on blackboard; may also proceed this way with washing hands and face, washing hair, brushing teeth, trimming nails, eye care, etc.)

3. How do you feel when you are clean and neat? Do you always feel good about being cleaned up or dressed up? How about when you've gone somewhere for a visit and you're all dressed up and someone invites you to play ball?

4. What did you wear to school today? How do you decide what to wear? Does anyone help you decide? Does what you're planning to do have anything to do with what you wear? How about the weather? How does it help you decide what to wear? What might you wear to a party?

5. How do you feel when your clothes fit? How about when your clothes are too large or too small?

6. How do you feel when you haven't had a bath or washed yourself for a longer period than usual?

7. Do you notice when other people around you look like they haven't had a bath or washed their hair or cleaned up as recently as they might have? How do you feel about that?

8. How do we keep ourselves neat besides the things we do to keep clean? (If necessary, ask questions to bring out clothing fit and repair; keeping hair clean, brushed, and combed; clean teeth; trim and clean toenails and fingernails; clean or polished shoes that fit, etc.)

9. When you're at home, what do you do with something you want to throw away? At a park? While you're traveling in a car? At school? What are some of the problems we have because people haven't always been careful about disposing of waste materials? Ask about air and water pollution.

10. Do we get all our habits of keeping clean and choosing what to wear from knowing what is good for us? How about people in another country? (Use an example the children have studied, if possible.) Do they wear the same kinds of clothes we do? Do you think they follow the same routines for keeping clean as you do? Do they usually have the same weather we do? Does that have anything to do with the kind of clothing they wear?

11. Let's think again about us. Do all of us wear exactly the same clothes? How are our clothes alike? How are they different? What can you think of that makes us choose slightly different clothes to wear? How about people who wear uniforms or costumes to work in? Can you name some kinds of work in which people do wear uniforms or costumes? Why do you suppose they wear uniforms? Can you think of any other reasons?

12. Do you always have exactly what you want to wear at a certain time? Can anyone buy all the clothes he ever would like to have? What are clothes made of? How are clothes made? Where do we get these materials?

13. What things do you do to help decide what you'll wear? Is there anything you can do regularly to help make sure you have the particular thing you want to wear all ready? Where do you put your dirty clothes when you take them off? How do you put things away in your drawers and closet? How do you look for something you don't find right away?

D. Activities

1. With the children, prepare a check list of personal health habits. Have each keep his own record for a week, set aside, then have the record checked off for a week some time after completion of discussion and activities. Then have them compare their own two check lists and discuss whether they see any changes, reasons for the changes, if any. List could include bathing, washing hair, washing hands before meals, wearing clothes suitable to weather, brushing teeth, etc. (Show students proper way to brush teeth; 3rd and 4th may use or make chart showing structure of teeth.)

2. Make a list together of many articles of clothing. Ask about special clothes for different kinds of weather if children do not bring up. Introduce pictures of people in parts of the world where weather extremes have obviously influenced clothing as Eskimo, African native. Bring out that in places where weather changes frequently, people do develop different clothing for different weather conditions. Children may enjoy cutting out and pasting up pictures of people in various clothing, from other lands as well as our own. They might be able to bring in dolls or actual articles of clothing from other lands, or older children might be able to adjust or make doll clothing to illustrate clothing from other lands. If there is enough real clothing

or many dolls, one might have an "Around the World Style Show." Another approach to this theme might be to make construction paper cut-outs and paste-ups of portraits of people from other lands. Plenty of books and pictures showing different dress would be needed. One might use material scraps, fur scraps, rickrack, gold thread, etc., to decorate.

3. Discuss dress-up clothes, ask about special days they might wear very different clothing such as Halloween, parading, etc. Again, have pictures of people around the world dressed for special ceremonies, holidays, weddings, etc. May pursue this topic in one of the ways suggested above, with perhaps a final showing in the style show of "Special Clothes for a Special Day."

4. Discuss differences between "work clothes," "dress-up clothes," "play clothes," "school clothes." If children don't think of uniforms, introduce with pictures, discuss different kinds of uniforms and some of the reasons for wearing them (so we can tell who the workers are and what they do for us; because they are proud of what they do; because of practical considerations as cost, mass production, durability, clean appearance, washability, etc.

E. Instructional Aids

Films:

1. Japanese Boy, EBF.

2. French Children, EBF.

Above films are available from C.I.C. Film Library.

F. Resources

For Teachers:

1. Byrd, et al. Health, 1966.

2. Lawrence, et al. Your Health and Safety, 1963.

For Students:

1. McIntire, Alta, and Hill, Wilhelmina. Where We Get Clothing. Chicago, Illinois: Follett Publishing Co., 1959.

2. Schloat, Warren G., Jr. Your Wonderful Teeth. New York: Charles Scribner's Sons, 1954.

LESSON FOUR

SAFETY

Concept: We face risks in the course of daily living. We need to anticipate hazards and take reasonable precautions to minimize danger. We also must know what to do in situations of immediate danger or accident.

A. Content

1. Experience has told us a good deal about the potential hazards in all arenas of daily living (e.g., traffic, school and playground, home, vacation, recreation, fire, water, and disease.)
2. Each person can do certain things to protect himself and others.
   a. We can learn about dangerous conditions and practices where we live and work and play and go from one place to another.
   b. We can adjust factors in the physical environment to promote safety.
   c. We can learn and think about rules (including laws) that are designed to protect us from known dangers and tell us about the safe way to do things. We can learn to stay aware of these rules and follow them.
   d. We can remember to be extra careful at times of particular pressure, such as when we are in a hurry, angry, or tired.
   e. We can learn something about the best way to act in situations of immediate danger or accident.
3. Many people and groups in our own community, our nation, and around the world, work to help protect us all from dangers in our daily living. We can give these people our respect, cooperation and best support.
4. Injuries caused by direct heat or electrical contact are called burns. A burn caused by hot liquid or vapor is called a scald. Some burns are just on the surface and some go much deeper into the flesh.
5. Drowning is the second leading cause of death between the ages of 5 and 14. Children might discuss safe procedure in water play such as, never swim alone, the dangers of depending on floating toys, overestimating ability on strength and endurance, the advisability on getting help instead of trying to save the person themselves, and proper use of lifesaving to assist themselves, and proper use of lifesaving devices such as ring buoy and pole. (Teachers Resource Medical Self Help Training - Lesson 3.)

6. When you are near or far away from a blast area there are some things you need to know. What to do, when to do it, and how to do it. When there is a blast, there is also heat and radiation. You need to know to whom you must go in case of injury or burn, and where the shelter is located.

7. Storms such as cyclones or tornadoes occur in some places at particular times of the year. You should know a safe place to go to if there is a storm warning. In order to get a safe place quickly you should practice the rules of safety.

B. Vocabulary

traffic
dangerous
danger
communicable disease (Grades 3, 4)
accident
prevention
safety
sterile (Grade 4)
shelter
artificial respiration (Grade 4)
wound
surface
socket
liquid
vapor
ointment (Grade 4)
blast
radiation (Grades 3, 4)

C. Introductory Discussion

1. How do we know about things that might be dangerous to us? (We learn from our own mistakes and from the mistakes of others.)

2. When we know about something that might be dangerous, what can we do so that our actions will be safe for ourselves and others? For instance, what can people do to lessen the danger of fire destroying houses and other buildings? (Continue along this line of questioning to develop safety rules in such areas as traffic, bicycling, walking, school and playground, home and vacation safety. Teacher may keep lists of such rules to guide discussion, making sure the major considerations are brought up by the children by asking leading questions to remind them of anything important that they may have missed.)

3. Look over the lists we have written together, and tell me what you as a child can do to help keep yourself and others safe from fire and accidents of all kinds.

4. Who else help keep us safe from dangers like these? Are there rules and laws that people follow for the sake of safety? Are there any people you can think of who go to work every day doing a job to help keep people safe?

5. What should you do in case of fire? (Develop according to age level of children - how to seek help, a few basic do's and don'ts in emergency situations of all different kinds.)

D. Activities

1. "Are You a Blunderbug?" Have children write stories, draw pictures showing unsafe actions. For example, a "Never-Look Blunderbug" runs into the street after his ball, not noticing oncoming cars.

2. Take snapshots of children in the class doing things the safe way for a contrasting side of the Blunderbug bulletin board.

3. Make paper money with different denominations of safety points which children can earn through many activities - e.g., contributing to the Blunderbug bulletin board, praising other children and grown-ups for safe practices they notice, helping adults repair something dangerous, covering mouth when coughing or sneezing, doing the right things during a school fire drill, etc. Could have weekly or monthly prizes.

4. Have groups do "reports" on safety rules in different areas. Could dramatize through skits or story-telling.

5. Invite some special people to come into the classroom to talk about safety with the children, e.g., policeman, fireman, water-safety instructor, city dog catcher, electrician, patrol boy from upper class.

E. Instructional Aids

Filmstrips:

1. Safety Education (set of six filmstrips), Junior Safety Series.

Films:

1. Safety Rules for School, Charles Cahill & Associates, Inc.

2. Safety With Electricity, Encyclopedia Britannica Films.

F. Resources

For Teachers:

1. Behavioral Research Laboratories, American Health and Safety Series, Palo Alto, Calif., 1964.

2. Byrd, O.E., et al. Health Today and Tomorrow, 1966

3. Glen, Harold T. Safe Living. Peoria, Illinois: Charles A. Bennet Co., Inc., 1960, Ch. 1-9.

4. U.S. Department of Health, Education, and Welfare and U.S. Department of Defense. Medical Self Help Training. Washington, D.C.: U.S. Printing Office, 1966, Lessons 1-3, 7-9.

For Students:

1. Bedford, Annie N. Walt Disney's-Donald Duck's Safety Book. New York: Simon and Schuster, 1954.

2. Smaridge, Norah. Watch Out! New York: Abington Press, 1965.

UNIT FIVE

COMMUNICABLE DISEASE

Introduction

Childhood is a stage of development during which the child grows, learns, and sometimes falls victim to disease. Colds, chicken pox, mumps, and measles are some of the diseases most of the children suffer from. This unit presents basic information on the causes, symptoms, and prevention of such diseases.

The three lessons in this unit are designed for young children in grades K-4. Lessons may be introduced and emphasized according to the following tabulation:

		GRADES				
LESSON	TITLE	K	1	2	3	4
One	Discussion of Germs	X	X	X	E	E
Two	Common Diseases	-	X	X	E	E
Three	Prevention and Treatment	X	E	E	X	X

LESSON ONE

COMMUNICABLE DISEASES

Concept: Germs that enter the human body may cause disease which can be communicated from one individual to another.

Teacher Background:

Microbes are forms of life which are too small to be seen without a microscope. They may be classified as (1) bacteria, the simplest form of one-celled plants; (2) fungi, plants more complex than bacteria; (3) protozoa, one-celled animals; (4) viruses, too small to be seen except with the electron microscope. Most microbes are harmless or can be useful to man, but a few are harmful and cause disease. Disease producing microbes are called germs.

Antibodies are specific substances in our body that fight disease germs. For some diseases a baby gets antibodies from his mother, for some our body builds them up from exposure or from having the disease. Once you have had some diseases the body knows how and can make antibodies fast. This keeps you from getting the disease again.

To prevent certain diseases requires the use of vaccines and toxoids. These are additions to the body's natural germ-fighting defenses. A vaccine consists of weakened or dead germs. A toxoid is a weakened toxin, the poison produced by certain germs. Infants are given vaccines to prevent such diseases as smallpox, whooping cough, and polio. Toxoids are used to prevent diphtheria and tetanus. Vaccines and toxoids are used to stimulate the body to form immune substances (antibodies). Booster inoculations are used to increase immunity in a person who is previously immunized.

A. Content

1. Definition:
    a. Germs are invisible to the eye.
    b. Germs are present everywhere.
    c. Germs grow very quickly.
    d. There are many, many kinds of germs.
2. Diseasesare caused by living germs.
    a. Contagious diseases are caused by germs passed from one person to another.
    b. Germs cause illness and can hurt or destroy parts of our body.
3. Define microbe. (This section intended for 3-4 grades only.)
    a. There are both harmful and harmless microbes.
    b. Some categories of microbes are bacteria, protozoa, virus, and fungi.

c. Examples of diseases caused by different microbes:

(1) bacteria - strep throat, pneumonia

(2) protozoa - malaria

(3) virus - scientists know that viruses exist but do not know many things about them - e.g., common cold, influenza, chicken pox.

(4) fungi - athlete's foot, ringworm

4. How germs are spread.

a. From person to person.

(1) through sneezing, coughing, or talking

(2) indirect (through air) and direct contact with open sores

(3) sharing such things as eating utensils, towels, washcloths and and tooth brushes used by a person who is ill.

b. Food and water.

(1) eating unwashed fruit and vegetables and food not properly refrigerated.

(2) drinking unpasteurized milk.

(3) drinking unpurified or contaminated water (country well).

c. Insects and animals.

(1) through mosquito bites.

(2) germs carried by the legs and bodies of flies.

(3) germs carried by rabid dogs or other animals, such as squirrels, rabbits.

(4) handling dead animals.

5. Our body's defenses.

a. Part of your blood called white cells, fights germs in your body.

b. When your body is fighting infection you usually have a fever.

c. Immunization is another way of helping our bodies fight disease.

6. Examples of immunization.

a. Natural immunization.

b. Artificial immunization

(1) vaccination (e.g., smallpox).

(2) inoculation (e.g., tetanus, diphtheria).

7. Our bodies contain antibodies. (This section intended for 3-4 graders only.)

a. Define antibody.

b. In addition to white blood cells our body fights germs by forming antibodies and sending them in the blood.

c. There are different antibodies for different diseases.

d. Antibodies stay in our blood after the illness to prevent us from getting the same disease a second time.

B. Vocabulary

germ - any microscopic plant, animal, or virus which causes disease
disease - sickness or illness
contagious (and communicable) disease - a disease which spreads from one person to another
microbe
bacteria
protozoa
virus
fungi
unpasteurized milk - milk which has not been exposed to high temperatures to destroy harmful bacteria
contaminate - to infect by contact or association
rabies - a virus disease that is contracted through the bite of an animal that has this disease
immune - having the capacity to resist a certain disease
immunization - a measured substance made up of dead or very weakened disease germs introduced into the body by inoculation ("shot")
vaccination - a vaccine consisting of weakened germs
shot - common term for inoculation
booster inoculation - a follow-up to original inoculation
antibody (disease fighters) - chemical substances formed within the body to fight germs

C. Introductory Discussion

1. What is a germ?

2. Can you see a germ?

3. Are there germs on your hands?

4. Are all microbes harmful?

5. Can you think of any bacteria that are helpful? (the bacteria in soil)

6. What are some diseases caused by microbes?

7. What are some ways germs can be spread?

8. How do you think your body can defend itself?

9. What "shots" (inoculations) have you had?

D. Activities

1. Put a slice of raw potato in a dish which contains a little water. Leave dish for 10 minutes and then cover and put in a dark place for a few days. Spots on potato will appear in a few days. Look at them under a microscope. These spots are masses of bacteria growing together.

2. Boil dead grass in water. Put pan of boiled grass aside for a few days. Look at and smell grass. Is there scum on the water? Put a drop of water with scum under a microscope and examine.

3. (Intended for 3-4 grades only.) Find out who made the first microscope and what he discovered with it. (Anthony van Leeuwenhoek)

4. H ave a child look up the word virus in the dictionary. Where does this word come from? (Latin word for poison)

5. Make bulletin board display of "How Germs Are Spread."

6. Discuss what immunization each child has received.

7. H ave school nurse discuss importance of immunization inoculations.

E. Instructional Aids

Films:

1. Germs and What They Do, Coronet Films.

2. Magic Touch - Immunization, Avis Films.

3. Your Health: Your Protection Against Disease, EBF.

F. Resources

For Teachers:

1. Byrd, O.E., Nielson, E.A., and Moore, V.D. Health. River Forest, Illinois: Laidlaw B rothers, 1966
2. Dubos, Rene, and Pines, Maya, Editors. Health and Disease (Life Science Library), New York: Time, Inc., 1965, Ch.3
3. Wilson, C.C., and Wilson, E.A. Health and Living. New York: Bobbs Merrill, 1962, pp. 138-166.

Resources (cont'd)

For Students:

1. Ames, Gerald, and Wyler, Rose. The Giant Golden Book of Biology. New York: Golden Press, 1961.

2. Gruenberg, B.C., and Gruenberg, S.M. The Wonderful Story of You. Garden City, N.Y.: Garden City Books, 1960, pp. 132-138.

3. Frahm, Anne. The True Book of Bacteria. Chicago: Children's Press, 1963.

LESSON TWO

COMMON DISEASES

Concept: Causes and symptoms of a few common diseases are discussed in this lesson.

A. Content

1. Colds

   a. When a person is wet, tired, and cold, germs have a better chance to make him ill. His resistance may be low.

   b. Recognizable symptoms might include tearing eyes, secretions from the nose, and coughing or sneezing.

   c. Some good rules to follow in prevention of colds include

      (1) dress appropriately for weather

      (2) avoid close contact with people who are ill

      (3) try to keep germs to yourself by covering your nose and mouth when coughing or sneezing. Use your own separate drinking glass.

      (4) take a hot bath before going to bed and breathe plain steam to aid decongestion.

      (5) get proper rest and diet, including abundant liquids and Vitamin C.

2. Chicken Pox

   a. Chicken pox is a virus infection which appears as a rash of little blisters on the skin.

   b. Chicken pox can be spread during the first six days after the appearance of the first blisters.

   c. Viruses remain in the sores until the sores dry up and form a crust; when the sores form the crust the disease is no longer contagious.

   d. The incubation period is usually 14 - 16 days or may be as long as three weeks.

   e. Although chicken pox is highly contagious it is usually mild.

   f. No immunization is presently available but one attack of chicken pox usually gives lifetime immunity.

3. Mumps

   a. Mumps is a contagious disease caused by a virus. Many cases occur in winter and spring.

   b. The mumps virus is present in the saliva of infected people.

   c. The mumps virus is spread by contact with a person who has this disease or with articles, especially silverware, that have been used by an infected person.

   d. The glands in front and below the ear become swollen and tender.

   e. Incubation period may be from 14 - 28 days, patients should be isolated until swelling subsides.

   f. A vaccination is presently available.

4. Measles

   a. Measles is a very contagious virus infection.

   b. Measles begins with the symptoms of a common cold and can be spread through coughing and sneezing.

   c. Within a few days a rash appears and may spread over the entire body.

   d. Patient should be isolated from appearance of earliest symptoms until five days after appearance of rash.

   e. One attack of measles usually gives lifetime immunity.

   f. Since measles can make you very sick and complications may occur, a vaccination is advisable and desirable.

5. German Measles (Rubella: 3-day measles)

   a. German measles is a contagious disease caused by a virus. It is spread by droplet infection or direct or indirect contact with an infected person.

   b. This disease occurs most often in winter and spring.

   c. German measles is usually mild and need not be avoided.

B. Instructional Aids

Charts: Obtain charts on communicable disease from your school nurse or A.M.A.

Filmstrips:

1. Avoiding Infection, EBF.

2. Common Cold, EBF.

Instructional Aids (cont'd)

Films:

1. I Never Catch a Cold, Coronet Films.

C. Resources

For Teachers:

1. American Medical Association, Today's Health Guide, The Association, 1965.
2. Igel, B. H. Prevention of Communicable Disease, The American Health and Safety Series, Palo Alto, California: Behavioral Research Laboratories, 1966, pp. 67-69, 80-84.

For Students:

1. Bendick, Jeanne. Have a Happy Measle, A Merry Mumps, and A Cheery Chicken Pox. New York: McGraw-Hill Book Co., Inc., 1958.
2. Lerner, Marguerite Rush. Dear Little Mumps Child. Minneapolis, Minn.: Medical Books for Children Publishing Co., 1959.
3. Lerner, Marguerite Rush. Michael Gets the Measles. Minneapolis, Minn.: Medical Books for Children Publishing Co., 1959.
4. Lerner, Marguerite Rush. Peter Gets the Chicken Pox. Minneapolis, Minn.: Medical Books for Children Publishing Co., 1959.

LESSON THREE

PREVENTION AND TREATMENT

Concept: Good health habits help prevent illness. A doctor should be consulted when illness occurs.

A. Content

1. Prevention

    a. Keep your body healthy through good nutrition, regular sleep, and exercise (refer to Unit Four).

    b. Doctors help us stay well by giving inoculations and through regular checkups.

    c. Avoid people who have contagious disease.

    d. Wash an open cut with hot water and soap and apply an antiseptic.

    e. Wash hands after toilet and before you eat.

    f. Keep foreign objects out of mouth (ex. pencils, erasers, etc.)

    g. You should not eat food which has a bad taste or appears to be spoiled.

    h. Cover and refrigerate leftover foods to avoid spoilage.

    i. Drink water only when you know it is safe.

    j. Wear clothing that keeps your body comfortable and dry.

    k. Houses should be equipped with screens to help keep insects out.

    l. Avoid handling strange animals.

2. Treatment

    a. Your doctor together with other health agencies can help you maintain good health.

    b. At first signs of illness do not hesitate to inform your parents, teacher, school nurse, or a responsible adult.

    c. In case of a minor injury (such as a skinned knee) you can assume responsibility for cleaning and self care. You can also help others in need.

    d. Be critical of commercials and advertisement about medicines. Your doctor can best advise you on treatment.

B. Vocabulary

antiseptic - killing or checking the growth of germs that cause infection
minor

C. Introductory Discussion

1. What can you do to prevent disease?
2. What precautions can you take around your house?
3. Who is consulted when there is illness in your family?
4. What can you do when one of your classmates gets hurt on the playground, in the park, etc.?

D. Activities

1. (For kindergarten - 1st grade.) Have children trace their hand on paper. Attach Kleenex onto picture of hand to stress importance of covering nose and mouth when you sneeze or cough.
2. Make bulletin board display of how to keep your body healthy.
3. Learn poems or songs about health.
4. Draw a design or picture of what you think a hiccup or sneeze looks like.

E. Instructional Aids

Filmstrips:

1. Health Stories, Avoiding Infection, EBF.

F. Resources

For Teachers:

1. Fischer, Aileen. Health and Safety, Plays and Programs. Boston: Plays, Inc., 1953, p. 119.

For Students:

1. Charly, R., and Supree, B. Mother, Mother, I Feel Sick. New York: Parents Magazine Press, 1966.

UNIT SIX

COMMUNITY HEALTH AGENCIES

Introduction

The child should become aware that health agencies, community helpers and government agencies work together to maintain community health.

The lessons in this unit may be introduced and emphasized as in the following tabulation:

		GRADES				
LESSON	TITLE	K	1	2	3	4
One	Going to the Doctor	X	E	E	E	-
Two	Learning About Hospitals and Clinics in the Community	X	X	E	E	-
Three	Division of Responsibility	X	X	E	E	X

LESSON ONE

GOING TO THE DOCTOR

Concept: Health specialists contribute to the well-being of the community.

A. Content

1. Our friend, the doctor, helps us maintain good health.
    - a. He gives examinations at regular intervals, prevents illness by giving immunization, and tries to correct defects early.
    - b. He tries to find out what is wrong with us when we are ill.
    - c. He tries to make sick patients well.
    - d. He tries to cheer patients up.
2. Your dentist is a friend who helps you have good teeth.
    - a. He cleans teeth.
    - b. He fixes teeth by filling cavities and by doing other necessary repair work.
    - c. He cautions us against eating excessive amounts of candy.
    - d. He advises us on good dental care. Our teeth and gums need exercise and we can get this by eating rough food (such as raw carrots and hard toast).
    - e. The dentist helps us appreciate that a smile and clean teeth improve our appearance.
    - f. We should visit the dentist every six months or more often if necessary.
3. An ophthalmologist (eye doctor) helps us care for our eyes.
    - a. He examines our eyes to find out whether they are serving us as well as they should. Example: need for eyeglasses.
        - (1) He uses instruments to look inside the eyes.
        - (2) He asks us to read letters from a chart.
    - b. He can also detect eye disease or other conditions that need correction.

c. He advises us to practice good eye care habits, to protect our sense of sight.

(1) Use a good light when reading or watching television.

(2) Do not sit too close to your TV when viewing it.

(3) Avoid rubbing your eyes when something is in them.

(4) Avoid looking directly at the sun.

(5) Rest and get sufficient sleep to help prevent eyestrain.

4. When we visit the doctor's office we are usually greeted by a nurse. She helps the doctor by:

a. Assisting with examinations.

b. Answering the telephone.

c. Talking with patients.

d. Taking care of the office when he is not there.

B. Vocabulary

patient - a person under medical care
ophthalmologist - a medical doctor who is specially trained in examining eyes and treating them. He is also called an optometrist.
stethoscope - instrument used by doctor to listen to a patient's heartbeat
pharmacist - a specialist who fills prescriptions
prescription blanks - note written by doctor for druggist which tells the medicine needed by the patient
thermometer - an instrument for measuring temperature
physician - a doctor who helps to diagnose disease and illnesses
cavity - decayed area of a tooth
decay - to break up or spoil

C. Introductory Discussion

1. In what ways does your doctor help you?

2. Does anyone know what instruments he uses during an examination?

3. What questions does he ask you?

4. Does he come to see you when you are ill?

5. What advice does he give you?

6. What dental care have you had?

7. How often do you visit the dentist?

8. What advice does he give you?

9. How can you prevent injury to your teeth? (Don't crack nuts, don't use teeth to cut a string, etc.)

10. How often and in what way should you brush your teeth?

11. How can we take care of our eyes? What should we do to protect our eyes?

12. What does the nurse at your doctor's office do?

13. Are there other helpers at the doctor's office and what do they do?

14. What does the nurse serving your school do?

D. Activities

1. Make bulletin board display of pictures of doctors, dentists, "eye doctors," and nurses.

2. Write stories telling how we feel about visiting the doctor.

3. Play doctor. Show how he takes pulse, uses a stethoscope, writes a prescription. Try to get a response by hitting knee with a rubber hammer.

4. Draw pictures of how the doctor and the dentist look while working in their offices.

E. Instructional Aids

Films:

1. The Doctor, Encyclopedia Britannica Films.

2. Judy's Smile, Avis Films.

3. The Nurse, EBF.

4. Our Wonderful Eyes and Their Care, Coronet Films.

5. Your Health: Your Teeth, Coronet Films.

F. Resources

For Teachers:

1. Byrd, O. E., Nielson, E. A., Moore, V. D. Health (Book 2). River Forest, Ill.: Laidlaw Brothers, 1966, pp. 44-49.

2. Wilson, Charles C., and Wilson, Elizabeth Avery. Health and Growth. New York: Bobbs-Merrill Co., 1961, pp. 91-105.

Resources (cont'd)

For Students:

1. Berger, K., Tidwell, R. A., Haseltine, M. A Visit to the Doctor. New York: Grosset & Dunlap, 1960.
2. Greene, Carla. I Want to Be a Nurse. Chicago: Children's Press, 1965.
3. Jubelin, Ruth. About Jill's Check Up. Chicago: Melmont, 1957.
4. Schlont, Jr., G. Warren. Your Wonderful Teeth. New York: Charles Scribner's Sons, 1954.
5. Thompson, Frances. About Doctor John. Chicago: Melmont, 1959.

LESSON TWO

LEARNING ABOUT HOSPITALS AND CLINICS IN THE COMMUNITY

Concept: Communities depend upon hospitals and clinics to serve their health needs.

A. Content

1. Hospitals are medical institutions that care for our health.

2. Their functions include the following:

   a. Provide patient care.

   b. May provide educational services such as training doctors, operating of school of nursing, etc.

   c. Treating emergencies.

   d. Conducting research.

3. There are many people who work in hospitals.

   a. doctors (attending physicians, resident physicians, interns)
   b. nurses (registered nurses, practical nurses and nurses' aides)
   c. orderlies
   d. dieticians
   e. technicians
   f. therapists
   g. office staff
   h. volunteers

4. Hospitals provide many services to the community.

   a. Your local hospital gives you a sense of security.

      (1) It remains open day and night.

      (2) It supplies emergency treatment.

      (3) The hospital's staff are especially trained to help us in times of disaster.

   b. Many hospitals have blood banks where stocks of blood are stored.

   c. Ambulance service may be provided in times of emergency.

   d. Hospitals are interested in maintaining community health and, therefore, may provide medical help for the needy.

   e. Citizens are encouraged by hospitals to contribute their talents and efforts to support medical progress.

B. Vocabulary

hospital - a place where people who are sick and injured or require special equipment and services get treatment that is not available at the doctor's office or at home.

clinic - a place which may or may not be connected with a hospital, provides examination and treatment of the sick by specialists, and does not require an overnight stay.

therapist - helps restore patients to health by special exercises and treatment.

orderly - man who helps move patients and performs heavy duties.

dietician - supervises hospital menus and prepares and serves special diets.

ambulance - a vehicle equipped for carrying an injured or sick person.

C. Introductory Discussion

1. Who knows what a hospital or clinic is?
2. Can you name some hospitals or clinics near us?
3. How do they help us? (Provide medicines and blood, mend broken bones, perform surgery, take X-rays, etc.)
4. Who else works in the hospital besides doctors and nurses?

D. Activities

1. Visit your community hospital.
2. Make puppets of doctor and nurse helping a patient.
3. Ask children to bring X-rays of broken bones or of things that children swallow.
4. Have children bring a cast. They should describe how the cast was put on and taken off.
5. Have class make scrapbook of drawings and pictures of special equipment used in hospitals (example: wheelchairs).
6. Ask children to collect and donate games, toys, books, etc., to the childrens' playroom of their local hospital.

E. Instructional Aids

Charts:

"The Health Professions," School Health Education Study. St. Paul, Minn.: Visual Products Division, 3-M, 1967.

Instructional Aids (cont'd)

Films:

1. The Hospital, EBF.

F. Resources

For Teachers:

1. Byrd, O. E., Nielson, E. A., and Moore, V. D. Health. River Forest, Illinois: Laidlaw Brothers, Book II, pp. 44-45.
2. Today's Health Guide, American Medical Association, 1965, pp. 312-317, 367-370.
3. Wilson, Charles D., and Wilson, Elizabeth. Health and Living. New York: The Bobbs-Merrill Co., 1961, pp. 204-207.

For Students:

1. Cosgrove, Margaret. Your Hospital, A Modern Miracle. New York: Dodd, Mead & Co., 1960.
2. Pyne, Mable. The Hospital. Cambridge: Houghton Mifflin Co., 1962.
3. Rey, Margaret and H. A. Curious George Goes to the Hospital. Boston: Houghton Mifflin Co., 1966.

LESSON THREE

DIVISION OF RESPONSIBILITY

Concept: Health specialists contribute to the well-being of the community.

A. Content

1. Government responsibility.

    a. One agency is the Fire Department.

        (1) Firemen are brave men who are always available to help the community fight fires.

            (a) They also help in other emergencies (rescue animals and rescue trapped children).

            (b) They work in shifts so that there are always firemen ready to fight fire during the day or night.

            (c) When they are not fighting fires they care for the fire station and their equipment.

            (d) Firemen continuously study such things as first aid and better ways of fighting fires.

            (e) At the fire each fireman has a certain job (some use ladders, others use hoses, etc.) but they all work together as a team.

            (f) Some small towns or cities have volunteer fire forces.

        (2) Firemen need special clothing.

            (a) Heavy waterproof coats which protect them from heat and water.

            (b) Specially shaped heavy helmets which protect their heads and necks.

            (c) Gloves to protect hands from heat of fire and cold weather.

            (d) Boots that are insulated.

        (3) Firemen use special equipment to fight fires such as hoses, axes, ladders, ropes, fire extinguishers, nets, and oxygen masks.

        (4) By knowing the causes and prevention of fires, we help ourselves and our community.

            (a) Do not play with matches or fire.

            (b) Check electrical outlets for overloading and bad wiring.

(c) Avoid accumulation of oily rags, newspapers, and other trash.

(d) Do not burn leaves unless they are in a container.

(e) Check campfires before leaving the site.

(f) Learn how to report a fire.

(g) You should have fire drill practice both at home and school.

b. The police force is composed of brave men and women who work hard day and night to protect the community.

(1) The work of the policeman includes many things.

(a) He fights crime and protects life and property.

(b) He helps control traffic.

(c) He helps in emergencies such as fires, accidents, etc.

(d) He teaches health and safety rules (bicycle safety, facts about drugs, etc.) to the community.

(e) He receives special training to become a police officer and continues to study newer police methods.

(2) The policeman wears a special uniform which is easily recognizable. He carries a pair of handcuffs, a whistle, a club, and a gun to use when necessary.

(3) Special equipment aids the policeman in his work.

(a) He drives a motorcycle or a car that has a two-way radio, siren, flashing lights, and possibly first aid equipment.

(b) There are special trucks used by certain policemen, such as the animal warden.

(c) At the police station scientific devices, for example, fingerprinting equipment, help the police.

(4) We are good neighbors and citizens when we help the police by reporting accidents and following safety rules.

c. The Public Works Division of our local government serves the community in many ways.

Teacher Background: Water pollution is a major problem today. Most communities have a sewage system to dispose their waste material. Sewers are underground and collect wastes from homes, schools, stores, and factories through a system of connecting pipes. Waste materials in our local communities are processed at sanitary sewage treatment plants. There are several of these plants located in Highland Park and one in Deerfield, adjacent to Alan Shepard Junior High School. Depending on plant location sludge is either dumped into Lake Michigan, returned to Skokie Valley Drainage Ditch (as in case of Highland Park), used as fertilizer on farms, or carried to the dump.

Lake Michigan supplies us with drinking water. Water purification is handled by the Filtration Plant located at Park Avenue and the lake in Highland Park. This water is pumped from a reservoir in Highland Park to a storage tank in Deerfield (located near the Sara Lee plant).

A separate system of pipes handles storm water.

(1) Special departments supervise our streets and sewers.

  (a) They repair streets.

  (b) They are in charge of snow removal and ice control.

  (c) They maintain storm sewers.

(2) Another department is responsible for the testing and treatment of our water supply.

(3) We use private companies to collect our garbage. They dispose of it at a place called the Sanitary Landfill.

(4) In some communities the local government provides for garbage pickup.

(5) The garbage man is an important health helper to the community.

d. Our government has health agencies to promote and protect the health of all Americans.

(1) The local government has the main responsibility of protecting its citizens from disease. The Health Department is the local governmental agency.

  (a) It is responsible for safe drinking water, sewage disposal, garbage disposal, sanitary food handling, supervision of milk production and distribution and inspection of meat.

  (b) It inspects private hospitals, hotels, motels, and restaurants.

  (c) Health departments may operate clinics.

  (d) The Health Department provides public health nursing service.

    1. Nurses visit homes which need their services.

    2. They work in clinics of the Health Departments.

  (e) It supervises the control of insects, rats, and rabid animals.

  (f) It keeps records of births, deaths, and communicable diseases.

(g) The Health Department helps educate the public to acquire and maintain good health habits.

(2) (Optional for 3-4 grades.) The State Health Department is responsible for the overall health program of the state.

(a) Its main responsibility is to assist local health departments.

(b) It may provide financial aid to local health departments.

(3) (Optional for 3-4 grades.) The national agency is called the United States Health Service. Its work includes:

(a) The prevention of communicable diseases carried from foreign countries.

(b) The prevention of the spread of diseases between states.

(c) The supervision of the sale of certain drugs and vaccines.

(d) Conducting medical research.

(e) Conducting educational health campaigns and working with city and state health departments.

(4) Citizen's responsibility.

(a) Citizens are also responsible for maintaining community health.

(b) Volunteer health organizations perform many important functions and supplement the work of governmental agencies.

(c) Good personal health habits help maintain good community health.

B. Vocabulary

water hydrant
volunteer
uniform
sludge - a solid matter produced by sewage treatment processes.
sanitary landfill - a dump for garbage.

C. Introductory Discussion

1. How would you report a fire?

2. What harm can be caused by turning in a false alarm?

3. What have you discussed about fire safety at home?

4. What would you do in case of fire in your home?

5. What is a patrol car?

6. What is a callbox?

7. How would you contact the police?

8. Tell the proper way to dispose of garbage in the home.

9. What happens if garbage isn't collected?

10. How do volunteers help the community?

11. How can you help keep your community healthy?

D. Activities

1. Use creative dramatics to show how a family might escape from their home in case of fire.

2. Take class on trip to local fire department.

3. Make diorama of firehouse.

4. Find[1] out the difference between one alarm, two alarms, and three alarms.

5. Dramatize ways of putting out a fire (rolling on a rug, pouring sand on a fire, using an extinguisher).

6. Have class make a bulletin board showing all ways police help us and the equipment they use.

7. Visit police station. Have children write about what they saw and learned.

8. Write poems about what would happen if there was no garbage collection.

E. Instructional Aids

Record: Community Helpers, CL #11, Bowmar Records, North Hollywood, Calif.

Song Books: Music For Early Childhood, New Horizons Series. New York: Silver Burdett Co., 1952, pp. 18-19.

Study Prints: Society for Visual Education, Inc.:
Fire Department Helpers,
Police Department Helpers,
The Society (1345 Diversey Parkway), Chicago, Illinois.

Films:

1. The Fireman, EBF. Available from C.I.C.

2. Policemen - Day and Night, Charles Cahill & Associates.

3. Your Friend, the Water, EBF.

4. Community Keeps Healthy, Film Associates of California.

Instructional Aids (cont'd)

Filmstrips: Community Helpers Series, McGraw-Hill.

F. Resources

For Teachers:

1. Lawrence, Thomas Gordon, Clemensen, Jessie Williams, Burnett, R. Will. Your Health and Safety. New York: Harcourt, Brace & World, Inc., 1963, pp. 481-488.
2. The League of Women Voters of Highland Park, This Is Highland Park, The City of Highland Park.
3. McIntire, Alta. Billy's Neighbors. Chicago: Follett Publishing Co., 1965, Units Two and Three.
4. Wilson, Charles C., and Wilson, Elizabeth Avery. Health and Happiness. New York: Bobbs-Merrill, 1961, pp. 177-210, 221-224.

For Students:

1. Barr, Jene. Fire Snorkel Number 7. Chicago: Albert Whitman & Co., 1965.
2. Brewster, Benjamin. The First Book of Firemen. New York: Franklin Watts, 1951.
3. Colby, C. B. Night People. New York: Coward-McCann, Inc., 1961.
4. Colby, C. B. Smoke Eaters. New York: Coward-McCann, Inc., 1954.
5. Collier, James Lincoln. A Visit to the Firehouse. New York: W. W. Norton & Co., Inc., 1966.
6. Dillon, Ina K. Policemen. Chicago: Melmont Publishers, Inc., 1963.
7. Greene, Carla. I Want to Be a Policeman. Chicago: Children's Press, 1958.
8. Hoffman, Elaine, and Hefflefinger, Jane. About Helpers Who Work At Night. Chicago: Melmont Publishers, Inc., 1963.
9. Hoffman, Elaine, and Hefflefinger, Jane. About Friendly Helpers Around Town. Chicago: Melmont Publishers, Inc., 1967.
10. Ienski, Lois. Little Fire Engine. New York: Walck, 1956.
11. Mashover, Leonard. You Visit a Fire Station, Police Station. Chicago: Benefic Press, 1965.
12. Newman, Shirlee Petkin, and Sherman, Diane Finn. About the People Who Run Your City. Chicago, Ill.: Melmont Publishers, 1963.

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A TEACHING PROGRAM
IN
HEALTH AND SEX EDUCATION

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PART II

Grades 5 - 8

UNIT ONE

SAFETY AND FIRST AID

Introduction

Safety education is needed to promote a positive attitude toward accident prevention and first aid. Students should recognize the need for safety education and be more aware that they have a personal responsibility to practice rules of safety in order to prevent accidents. Students should recognize the importance of first aid procedures and understand that first aid procedures are not medical treatments.

The three lessons in this unit may be introduced and emphasized as follows:[1]

		GRADES			
LESSON	TITLE	5	6	7	8
One	Safety, Hazards and Accidents	X	E	-	R
Two	First Aid	X	E	-	R
Three	Disaster Procedures	X	E	-	R

Vocabulary

accidents
artificial respiration
bruises
carbon monoxide
civil defense
concussion
convulsion
dislocation
epilepsy
fainting
first aid
flammable
fracture
frostbite
infections
inflammable
poison ivy
shock
tourniquet
tornadoes

---

[1] "X" indicates introduction of lesson
"E" indicates emphasis and detailed coverage
"R" indicates brief review of lesson.

LESSON ONE

SAFETY, HAZARDS, AND ACCIDENTS

Concept: If students have an awareness of the extent and kinds of environmental safety hazards, many accidents can be prevented.

Content

A. National statistics are evidence that accidents should be a serious concern.

1. Over 100,000 people die annually in accidents, or 12 every hour.

2. More than 10 million people are injured annually, or 1,100 every hour.

3. Accidents are the chief cause of death among the young.

   (a) More children die between ages 1-14 from accidents than the next six causes of death combined.

   (b) Accidents are the leading cause of death among all persons ages 1 to 36.

4. The principal causes of fatal accidents are motor vehicles, drowning, firearms, falls, burns, and poisons.

B. The home is the scene of numerous kinds of accidents.

1. Falls are the leading cause of home accidents.

   a. Stairways cause many falls.

      (1) Handrails should be tight and preferably on both sides.

      (2) Stairways should be kept free of debris.

      (3) Stairways should be well lighted.

      (4) Stairways should be climbed one step at a time.

   b. Ladder falls are dangerous.

      (1) Keep ladders in good repair.

      (2) Check them periodically for loose or broken rungs.

      (3) Stepladders should be opened fully and locked in place.

      (4) Ladders should be climbed slowly, one rung at a time.

      (5) Ladders should be placed firmly so they will not slip.

c. Slipping falls are common.

  (1) Highly polished floors can be dangerous.

  (2) Improperly placed throw rugs are hazardous.

  (3) Water and greasy materials should be cleaned up.

  (4) Care should be used in getting in and out of bathtub or shower.

  (5) Sidewalks and front steps should be kept clear of ice and snow.

d. Tripping falls cause death and injury.

  (1) Watch for toys and other objects on floors.

  (2) Keep buckets, tools and boxes off stair steps.

  (3) Keep sidewalks and porches free of fallen limbs, tools, etc.

2. Fires and burns are caused in many ways.

a. Smoking and matches are the number one fire hazard.

  (1) Smoking in bed or when extremely tired is most dangerous.

  (2) Cigarettes and cigars should be snubbed out.

  (3) Matches should be out of children's reach at all times.

  (4) Matches should be stored in a safe place in a proper container.

b. Hot grease and water can be dangerous.

  (1) Hot grease can ignite.

    (a) Smother a flame like this with a pan lid, salt or flour.

    (b) Pouring water on this type of fire will cause it to splatter or spread.

  (2) Keep all pots and pan handles turned parallel to stove burners.

  (3) Handle hot coffee and other hot liquids with care.

c. Flammable liquids (gasoline) should be handled with care.

  (1) Never use them for starting fires; their fumes can travel great distances and can flash.

  (2) They should be used out of doors and never around open flames or where there are sparks.

  (3) Oily rags and newspapers can cause spontaneous combustion fires.

d. Heaters and heating systems are sometimes fire problems.

  (1) Kerosene and gas heaters should be checked periodically.

    (a) Fuel lines should be made of copper or rigid metal pipe.

    (b) Burners should always be vented to the outside of the house.

    (c) They should not be placed near flammable materials, curtains, etc.

    (d) They should be checked regularly for leaks.

    (e) They should have a firm base to prevent tipping.

  (2) Fireplaces are a source of danger.

    (a) Be sure that the flue and the chimney are clean.

    (b) Keep a screen in front of the fireplace.

    (c) Store fuel away from fireplace.

e. Electricity can cause fire, shock and death.

  (1) Electrical fires result from such causes as inadequate or defective wiring, overloaded circuits, loose wires, improper use of fuses, or leaving electrical applicances (especially irons) unattended.

  (2) Shock or death results from improper handling of wires or appliances.

    (a) Electric appliances (radio, fan, etc.) should not be touched when one is in the bathtub or otherwise wet.

    (b) Downed electric lines should be avoided carefully.

    (c) Handling plugs or wires when insulation is worn is risky and dangerous.

  (3) Deaths from accidental poisoning are on the rise.

    (a) Gas poisoning comes from different sources.

      1. Carbon monoxide gas from automobiles is odorless, colorless and deadly.

        a. Do not start car in garage with the door shut.
        b. Have a good muffler and exhaust pipe.

2. Natural gas can also be a killer.
    - a. Check heaters and furnaces for leaking gas.
    - b. Be sure heaters and furnaces are properly vented.
    - c. Learn to recognize the smell of natural gas.

(b) Poisoning from liquids and solids kills many people each year.

1. Insecticides and rodent poisons are dangerous.
    - a. Keep them locked up and labeled.
    - b. Keep them away from food and food storage areas.
    - c. Use them only as directed.
    - d. Wash foods thoroughly when insecticides have been used.

2. Household cleaners can be lethal.
    - a. Mothballs, dyes, hair spray, lye and certain waxes should be stored away from children.
    - b. None of the above should ever be taken internally by anyone.

3. Medicine and pills are the greatest source of danger.
    - a. Read all labels carefully.
    - b. Do not take medicine in the dark.
    - c. Avoid taking medicine in front of children.
    - d. Do not transfer medicine or pills into containers without labels.
    - e. Keep all medicines and pills out of reach of children.

4. Improper storage and handling of food can cause poisoning.
    - a. Keep foods that may spoil properly refrigerated.
    - b. Wash fruits and vegetables thoroughly.

(4) Cutting implements cause many injuries.

(a) Knives are particularly dangerous.

1. Keep handles tight and in good repair.

2. Store knives in safe places.

3. Always cut away from the body when using them.

(b) Razor blades are extremely dangerous.

1. Never let children use them, without supervision.

2. Provide a disposal place for them.

3. Do not use them as knives.

(c) Broken glass should be handled carefully and disposed of properly.

(d) Tin can lids should be handled carefully.

(e) Large cutting tools (axes, sickles) need careful handling and storage.

(f) Power tools and mowers can cause injuries.

1. Use workshop tools wisely.
    a. Use proper guards, goggles, and other safety devices.
    b. Turn motors off when not in use.
    c. Keep machinery properly oiled and repaired.
    d. Never allow children and immature youth to use them.

2. Many of the accidents resulting from the use of power mowers could be avoided by following safety rules.
    a. Check lawn for all debris which could be thrown by the mower.
    b. Always disconnect the spark plug before making repairs or adjustments.
    c. Never attempt to unclog mower while it is running.
    d. Keep feet clear of blade when starting.
    e. Never refuel while engine is running or excessively hot.

C. Automobile accidents far outnumber all other causes of accidental death.

1. There were 47,700 traffic deaths in 1964.

2. There are over 3 million persons injured each year.

3. Of all accidental deaths of young people, 64% are motor vehicle accidents.

4. Fifteen per cent of all drivers are under 25 years of age, yet they have 25% of all of the accidents.

5. Studies show that about half of all fatal accidents involve a drinking driver.

6. Excessive speed accounts for 1/3 of all fatal accidents.

    a. Breaking speed limits is dangerous.

    b. Speed should be regulated according to existing conditions.

        (1) Density of traffic is a vital factor.

        (2) Road conditions are another factor.

            (a) The presence of rain or ice requires a slower speed.

            (b) Narrow roads and bridges require lower speed.

(c) Dirt and gravel roads are less stable and require lower speed.

(d) Road repairs and construction areas require lower speed.

7. Human failure causes most accidents.

   a. People sometimes simply use poor judgment.

   b. Driving when emotionally upset is unwise.

   c. Not paying enough attention can be fatal, or, at best, embarrassing.

   d. Physical deficiencies such as tiredness, impaired eyesight, hearing, or slow reactions result in accidents.

8. Mechanical deficiencies such as bad brakes, worn tires, or faulty windshield wipers cause many accidents.

9. There are ways to reduce the number of auto accidents.

   a. Improved safety education programs would help.

   b. Better driving attitudes would help.

      (1) Have more respect for the law and traffic rules.

      (2) Develop better judgment and good driving habits.

      (3) Show more courtesy and respect for the other driver.

   c. Better or sturdier over-all construction of automobiles would help in cutting down the death rate.

      (1) The use of safety belts can save lives.

      (2) Having added safety features (padded dash, collapsible steering wheel, etc.) will help reduce or prevent more serious injuries.

D. Bicycle accidents cause most of the deaths and injuries suffered by children between ages 5 and 14.

1. There has been an average of 400-500 deaths per year.

2. There have been 25,000-30,000 injuries per year.

3. Most of these accidents have been collisions with motor vehicles.

4. Following the "Bike Riders Safety Rules" suggested by the Bicycle Institute of America should help reduce bicycle accidents.

   a. Observe all traffic regulations - red and green lights, one-way streets and stop signs.

   b. Keep to the right and ride in single file. Keep a safe distance behind all vehicles.

c. Have a white light on front and a danger signal on rear for night riding. Wear white or light colored clothing at night.

d. Have a satisfactory bell or horn to warn of approach. Always ride at a safe speed.

e. Give pedestrians the right of way. Avoid sidewalks, if possible; use extra care if you must ride on a sidewalk.

f. Look out for cars pulling out into traffic. Keep a sharp lookout for the sudden opening of car doors.

g. Ride in a straight line. Do not weave in or out of traffic or swerve from side to side.

h. Always use proper hand signals for turning and stopping. Park your bicycle in a safe and proper manner.

5. Proper care of bicycle is also important.

a. Know parts of bicycle

(1) Know how to oil it.

(2) Know how to fix a tire.

b. Have bicycle safety checks done when opportunities are provided by the police or interested clubs.

E. Water accidents are becoming more numerous because of the increased number of boaters and because water safety rules are often ignored.

1. Millions participate in boating.

a. There are over 8 million boats in America.

b. Forty million people engage in boating.

2. Knowledge of safety factors will reduce accidents.

a. Know your boating traffic rules.

b. Know how to cope with engine failure in power boats.

c. Understand weather conditions and warnings.

d. There should be life jackets for all passengers.

e. Never overload the boat.

f. Do not allow horseplay, standing up, or improper movements in small boats and canoes.

g. Dress properly for sun, cool weather or rough water.

3. Swimming accidents cause many deaths.
    - a. There are close to 7,000 drownings each year.
        - (1) About half take place while swimming.
        - (2) The other half fall from docks, piers, boats or while fishing.
    - b. Learning to swim is a basic necessity for anyone spending time near water.
        - (1) Swimming instructions are available in most communities.
        - (2) Learning to float and tread water may save your life.
    - c. There are many safety rules to follow in swimming.
        - (1) Never swim alone.
        - (2) Do not swim at posted dangerous places.
        - (3) Do not try endurance or distance swimming unless a boat is with you.
        - (4) Do not dive or jump into extremely cold water. (The shock may cause cramps.)
        - (5) Do not swim at night except in lighted pools.
        - (6) Do not swim in the surf unless you are a strong swimmer.
        - (7) Do not dive in strange waters which may have underwater obstructions, drop-offs or currents.
        - (8) Do not run or horseplay in the water.

4. Other water sports are fun but caution must be practiced.
    - a. Fishing is enjoyed by millions of people.
        - (1) Wading (especially with hip boots) in deep water can be dangerous.
        - (2) Be careful in fast rapids and swift water.
        - (3) Observe all boating rules when fishing from a boat.
        - (4) Be careful of high and slippery banks.
        - (5) Cover the ends of fishhooks - they can injure or blind the user or someone else.

b. Water skiing is a popular activity.

(1) You should be a good swimmer.

(2) Always wear a life vest or jacket.

(3) Be sure the water is deep enough.

(4) Watch out for other boats.

c. Scuba diving is increasing in popularity.

(1) This sport is for experienced swimmers only.

(2) Have proper lessons and instructions first.

(3) It requires good physical condition and calm temperament.

(4) Observe all safety precautions and regulations very carefully.

F. Firearms accidents.

1. There are about 2,000 deaths each year and many more are injured from gun accidents.

2. About as many are killed in the home as in the field.

a. Accidents occur when guns are "demonstrated."

b. Accidents occur when guns are being cleaned.

c. Playing around or aiming at someone frequently causes accidents because someone "didn't know it was loaded."

3. The United States has more deaths caused by guns than any other country in the world.

a. The City of Chicago has more gun deaths per week than England has per year.

b. Gun abuse is a major source of crime in the United States.

4. Assassinations of leading politcal figures have brought national attention to the need for gun control laws.

a. U. S. Congress has forbidden mail order sale of handguns and is considering stringent laws for all types of firearms.

b. The State of Illinois has passed a gun registration law effective September 1, 1968.

c. Cities such as Chicago have passed local registration ordinances.

5. Knowledge of safety rules is vital.

    a. Know your firearm, what makes it fire, its potential hazards, what safety features it has.

    b. Keep firearms locked up or out of reach when not in use.

    c. Always treat a gun as if it were loaded.

    d. Never load a gun unless you are going to use it.

    e. Keep the safety catch on and do not trust it.

    f. Never point a gun at anyone, loaded or unloaded.

    g. Keep gun in top condition by proper cleaning, lubricating and inspection.

    h. When hunting, always wear clothes that are easily visible.

    i. Point a gun toward the ground when carrying it.

    j. When crossing a fence, put the gun through first and lay it on the ground.

    k. Always identify the target before you shoot at it.

    l. Know all hunting safety rules and practice them.

Instructional Aids: Listed on last page of this unit.

References: Listed on last page of this unit.

LESSON TWO

FIRST AID

Concept: First aid is the immediate and temporary care given to an injured or sick person until the services of a physician can be obtained.

Content

A. General first aid instructions.

1. Keep calm.
    - a. Some cases do not require hurried action.
    - b. Haste may be harmful - avoid panic.
2. Keep the injured person lying down.
3. Stay with the injured person and send someone else for help.
    - a. Report the location of the person.
    - b. Report the extent of the injuries.
    - c. Report the type of first aid being given.
    - d. Report the first aid supplies available.
4. Control bleeding.
    - a. Serious bleeding should be stopped by applying direct pressure with a clean or sterile compress.
    - b. Do not use tourniquet.
    - c. Nosebleeds require a different technique.
        - (1) Press nostrils firmly together.
        - (2) Have patient seated in an upright position.
        - (3) Instruct patient not to blow nose after the bleeding has stopped.
        - (4) Keep patient quiet until blood clots.

5. If a person has stopped breathing, artificial respiration should be started immediately. American Red Cross procedures are as follows:

   a. Wipe foreign matter from victim's mouth.

   b. Tilt head back, pulling jaw into a jutting position (Figure 1).

   c. Open your mouth wide and place over victim's mouth. Pinch off his nostrils. (In case of infant, place your mouth over both the mouth and nose of the victim.) (Figure 2.)

   d. Blow air into victim's mouth or nose. (Figure 3.)

   e. Remove your mouth, release nostrils. Listen to find out if you can hear the air returning. (Figure 4.)

   f. If after several attempts you hear no air exchange, quickly turn person on his side and pat sharply on back to dislodge possible obstructions in the air passages.

   g. Repeat steps "d" and "e" at the rate of about 12 deep breaths per minute for adults and 20 shallow breaths for a child.

6. Procedures are as follows if a person has swallowed poison:

   a. Determine the type of substance swallowed.

   b. Call the Poison Center in Highland Park (ID 2-8000).

   c. Keep patient quiet.

7. Guard against shock in all cases of injury.

   a. A badly injured person may develop a serious condition known as shock in which the flow of blood is disturbed and the brain does not receive enough blood.

   b. Some causes of shock may involve a bad burn, loss of blood, broken bones, or an emotional disturbance.

   c. The victim of shock displays symptoms.

      (1) The skin feels cool and is whiter than usual.

      (2) Perspiration may appear on the forehead, chin, or above the mouth.

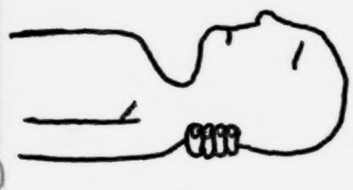
Fig. 1

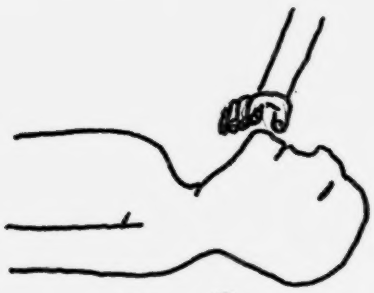
Fig. 2

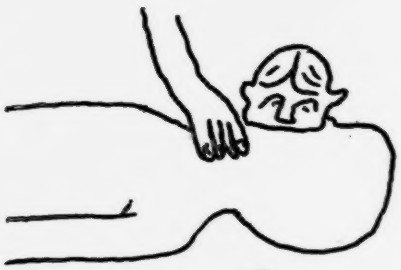
Fig. 3

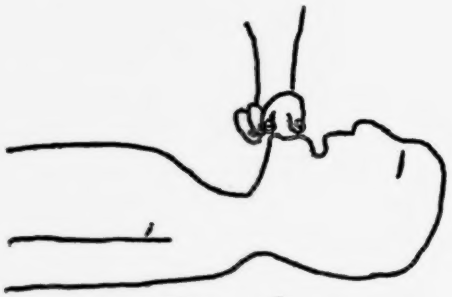
Fig. 4

(3) The victim may vomit.

d. Shock can be alleviated or prevented.

(1) Have the victim lie down at once.

(2) Cover victim enough to keep him warm, but do not make victim perspire.

(3) Do not disturb the victim unnecessarily.

B. Specific injuries demand specific procedures.

1. Wounds are breaks in the skin caused by force and usually extend into the underlying tissues.

a. Abrasions are wounds made by rubbing or scraping (example: floor burns).

(1) First aid measures are to clean the wound with soap and water, apply a mild antiseptic and sterile dressing or bandage.

(2) See a doctor for further care if there is any evidence of infection.

b. Incised wounds are large cuts that tend to bleed freely.

(1) First aid measures are to stop the bleeding immediately.

(2) Apply a sterile dressing or bandage.

(3) See that victim gets a doctor's attention for further care.

c. Lacerations are jagged, irregular wounds often associated with tissue damage (example: dog bite).

(1) First aid measures are to wash the wound.

(2) Apply antiseptic and bandage.

(3) Send victim to the doctor at once.

d. Puncture wounds are wounds in which a sharp object is run through the skin (example: stepping on a nail).

(1) First aid measures are to encourage bleeding by squeezing around the edges of wound.

(2) Apply sterile dressing.

(3) Send victim to the doctor.

e. Poisonous snake bites are a form of puncture wound that require different first aid.

(1) Victim should lie down and become quiet at once.

(2) Wrap a moderately tight band about 1 or 2 inches above the wound.

(3) Make several cuts around the wound.

(4) Suck the poison out of the wound.

(5) Acquire medical help as soon as possible.

2. Secondary complications sometimes occur to the skin and underlying tissues.

a. Infections are usually due to bacteria that enter a wound.

(1) Signs of infection appear from two to seven days after injury.

(a) The wound becomes red and tender.

(b) Swelling may occur.

(c) Pus may form in the wound.

(2) Infections require treatment by a physician.

b. Bruises are injuries that cause small capillaries in the muscle to rupture.

(1) Blood collects between the muscle and the skin causing a black and blue appearance.

(2) Cold cloth and ice tend to reduce pain and swelling.

3. Injuries to the bones and connecting tissues include fractures, dislocations, and spasms.

a. A fracture is a break in a bone.

(1) The simple fracture is an injury of the bone only.

(2) The compound fracture is one in which the broken bone extends through the skin.

b. Fractures are usually accompanied by typical symptoms.

(1) At the moment of injury, fractures usually cause pain.

(2) The flesh surrounding the fracture will be tender.

(3) The victim usually does not want to move the injured part, resulting in lack of motion.

(4) Swelling usually develops around the injured area.

(5) The body part may be deformed.

(6) Sometimes the skin overlying the fracture may become discolored.

c. Limited first aid should be given in case of fracture.

(1) Do not permit motion near the broken ends of the bones.

(2) Have victim sit or lie down and treat for shock.

(3) Send for help.

(4) While help is coming, try to cheer the person. Do not talk about the injury.

(5) In case of a compound fracture, bleeding may need to be controlled. but if the bone is protruding - DO NOT PUSH BONE BACK.

d. A dislocated bone is one sprung out of place at the joint.

(1) Signs are like those of a fracture.

(2) Give first aid as for fracture.

e. Sprains can occur when there is great pressure exerted on the bones and surrounding tissue at a joint.

(1) Sprains cause pain, swelling and discoloration.

(2) Treatment consists of cold compresses and elevation of the part.

(3) The patient should be examined by a physician.

4. Extreme temperatures cause injury to tissues.

a. Burns are tissue injury resulting from excessive exposure to heat.

(1) In the first degree burn, the skin becomes red.

(2) In a second degree burn, blisters appear after the injury.

(3) A third degree burn is the most severe, resulting in deep injury to the skin and underlying tissues.

(4) The following measures are recommended for treatment of burns:

(a) Control pain by excluding air (example: soak in cold water).

(b) Try to prevent infection by covering with a clean bandage if soaking is impractical.

(c) Always treat a victim of severe or extensive burn for shock.

- (d) In case of a chemical burn, wash thoroughly with large quantities of water.
- (e) For sunburn, apply a burn ointment if skin is reddened.
- (f) Always call a doctor for second and third degree burns.

b. Frostbite is tissue injury resulting from excessive exposure to cold.

- (1) Cover the affected part until person can get indoors.
- (2) Slowly re-warm the affected part with tepid water or compresses.
- (3) Give the victim warm drinks.

C. The unconscious require special first aid procedures.

1. Accidents or illnesses sometimes result in unconsciousness.

   a. A blow to the head may cause a concussion and/or unconsciousness.

   b. Interference with the blood supply to the brain can cause a stroke and unconsciousness.

   c. People may become unconscious because of severe bleeding, drinking alcohol, poison, heart disease, etc.

   d. The following first aid procedures are recommended.

      (1) Give artificial respiration if victim has stopped breathing.

      (2) Treat victim for shock.

      (3) Loosen tight clothing.

      (4) Summon help.

2. Fainting results from insufficient supply of blood to the brain.

   a. Keep victim lying flat.

   b. Loosen tight clothing.

   c. Warm liquids may be given after victim regains consciousness.

   d. If victim does not recover soon, get a doctor.

3. Epileptic convulsions (symptomatic of epilepsy, a disease of the nervous system) can result in unconsciousness.

   a. Epileptic victims sometimes become unconscious, fall and have severe muscle spasms.

   b. When an epileptic is unconscious and begins convulsions, there is nothing one can do to stop the attack.

c. First aid for an epileptic convulsion includes the following:

(1) Try to prevent victim from injury by easing him to the floor and protecting him from striking hard objects.

(2) After an attack, allow the victim an undisturbed sleep.

4. Convulsions can result from other causes.

a. Any disease that affects the brain may cause convulsions.

(1) Injury to the head resulting from an accident may cause convulsions.

(2) Severe cases of infection may cause convulsions.

(3) High body temperature may cause convulsions.

(4) Brain tumors may cause convulsions.

b. Treatment for these seizures is the same as those for an epileptic convulsion.

D. Abdominal pains should not be dismissed lightly.

1. Put victim to bed.

2. Call a doctor.

3. Do not feed the victim.

4. Do not give a laxative.

5. Do not apply heat.

E. Irritations from insect bites and poisonous plants can be alleviated.

1. First aid for insect and tick bites are as follows:

a. Try to remove tick from skin without squeezing it.

(1) Cold water or ammonia water applications may relieve the itching.

(2) Try a paste of baking soda over the bite.

b. Bee stings may result in a violent reaction or may even be fatal.

(1) Remove stinger.

(2) If signs of shock, excess swelling or faintness appear, get victim to a hospital immediately.

c. A violent reaction to any insect bite is possible, always requiring professional treatment.

2. Poison ivy, poison oak, and poison sumac frequently cause skin poisoning.

    a. Signs of skin poisoning.

        (1) Skin will get red and swelling develops in 1 to 9 days.

        (2) Blisters will develop.

        (3) Itching is usually present.

    b. First aid measures for poisoning are as follows:

        (1) Do not touch other parts of the body.

        (2) Wash the infected part in brown soap (Fels Naphtha) and water. Do not rub.

        (3) Rinse with rubbing alcohol if available.

        (4) If poisoning develops, see a doctor.

Instructional Aids: Listed on last page of this unit.

References: Listed on last page of this unit.

LESSON THREE

DISASTER PROCEDURES

Concept: Disaster procedures should be taught so that students may become aware of the fastest help available in critical emergencies.

Content

A. Violent and destructive windstorms such as tornadoes require immediate action.

  1. Seek shelter.

    a. Go into a basement, preferably sitting against a southwest wall.

    b. If a basement is not available, lie down under table away from windows or glass.

    c. Students in schools should know the location of their designated shelter areas.

      (1) Wait for instructions.

      (2) Proceed to area in an orderly fashion.

  2. Listen to local radio station for further instructions.

B. A source of information and location of shelter are first needs in case of a nuclear attack.

  1. Listen for the Civil Defense warning signals on the radio.

  2. Know where your shelter areas are located and get there as soon as possible.

C. Fire requires two actions.

  1. Evacuate building in an orderly manner.

  2. Call Fire Department and give the address of the fire.

Instructional Aids

Films:

1. Accidental Behavior, Progressive Pictures.

2. Essentials of First Aid, United World Films.

3. First Aid on the Spot, Encyclopedia Britannica Films.

4. Rescue Breathing, American Film Producers.

Instructional Aids - Films (cont'd)

5. Safe Bicycling, International Film Bureau.
6. Safety Begins at Home, Young America Films.
7. Safety With Everyday Tools, Coronet.
8. In Case of Fire, Encyclopedia Britannica Films.
9. Water Safety, Young America Films.
10. When You Are a Pedestrian, Encyclopedia Britannica Films.

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2. Metropolitan Life Insurance Co, Home Accident Fatalities. Pamphlet.
3. National Safety Council Pamphlets: Nice Going Pop; Safety Education Magazine.
4. Office of Superintendent of Public Instruction, The Challenge of Safety Education, Springfield, Illinois. Pamphlet.
5. United States Department of Health, Education and Welfare, and United States Department of Defense, Office of Civil Defense, Medical Self Help Training. Washington, D. C.: U. S. Government Printing Office, 1967.

UNIT TWO

HUMAN BIOLOGY

Introduction

The human body is an automatic, unbelievably complex biological mechanism. It is built of individual units, called cells, combined into larger structures (organs) and systems. The cells and larger units support other cells and units, and are in turn supported by them. Although we will study the systems of the body individually, it should be emphasized that each system supports all the other systems.

Many hundreds of physical and chemical processes are taking place in the body at all times. It is through the performance and regulation of these processes that we are able, as living beings, to carry on our many activities, maintain ourselves in a normal physiological condition, and produce new beings like ourselves.

As in all other animal organisms, the primary biological purpose of the body is the production of new organisms similar to itself. With this in view, much growth and many changes must occur in the bodies of newly born humans before they are capable of producing new human beings.

This unit is designed for students in grades five through eight. Teachers are advised to introduce and emphasize the content according to the following table:

		GRADES			
LESSON	TITLE	5	6	7	8
One	The Cell	X	-	E	-
Two	The Skeletal System	X	-	E	-
Three	The Muscular System	X	-	E	-
Four	Skin	X	-	E	-
Five	The Circulatory System	X	-	E	-
Six	The Respiratory System	X	-	E	-
Seven	The Nervous System	X	-	E	-
Eight	The Digestive System	X	-	E	-
Nine	The Excretory System	X	-	E	-

		GRADES			
LESSON	TITLE	5	6	7	8
Ten	The Endocrine System	X	-	E	-
Eleven	The Reproductive System	X	-	E	-
Twelve	Growth and Development	E	-	R	-
Thirteen	Heredity	X	-	E	-

Vocabulary

vacuole
protoplasm
endoplasmic reticulum
ribosome
mitochondria
mitosis
cartilage
synovial fluid
ligament
marrow
cardiac muscle
tendon
epidermis
dermis
plasma
platelets
atrium
artery
capillary
vein
lymph
diaphragm
bronchi
alveoli
cerebrum
cerebellum
medulla
peripheral system
neuron
sympathetic system
parasympathetic system
sclera
retina
iris
pupil
aqueous humor
vitreous humor
eustachian tube
cochlea
semicircular canal
olfactory nerve
enzyme
alimentary canal
saliva
esophagus
gastric juice
pancreas
kidney
nephron
urethra
ductless gland
hormone
pituitary
hypothalamus
thyroid
adrenal
ovaries
testes
asexual reproduction
sperm
ovule
fertilization
penis
semen
ovulation
fallopian tubes
uterus
vagina
zygote
embryo
placenta
fetus
puberty
seminal emission
menstruation
masturbation
chromosome
gene
dominant
recessive

LESSON ONE

THE CELL

Concept: Life exists only in the form of cells. The cell is the smallest organization which displays the properties and processes that we refer to as "life."

Content

A. All living things (animals and plants) differ from each other in appearance, but the cells of each are made of similar components which are similarly arranged.

B. Although similar in many respects, there are some significant differences between animal cells and plant cells.

1. Most animal cells are soft and their shape can be changed easily while plant cells are usually enclosed by a firm cell wall which gives them a permanent shape.

2. The storage structures (vacuoles) within an animal cell are small and frequently are moved about within the cell; plant cell vacuoles are large and remain in a fixed position within the cell.

C. In our bodies there are found many different types of cells, such as muscle cells, blood cells, nerve cells, bone cells, each designed to perform a special function.

D. In a complex living organism such as man, the cells are arranged in increasingly complex structures.

1. Groups of similar cells form a "tissue" (skin, muscle fiber, etc.).

2. A group of tissues form an "organ" (heart, eye, stomach, etc.).

3. A group of organs form a "system" (circulatory, respiratory, etc.).

4. The human body is composed of many systems.

Note: For the remainder of this lesson, "cell" refers to animal cells.

E. The entire material of which a cell is composed is referred to as protoplasm.

1. The nucleus is the part of the cell which controls most of the cell's activities.

   a. It is surrounded by a "nuclear membrane" which allows certain materials to pass into and out of the nucleus.

b. It contains long thin structures called "chromosomes," which carry forward hereditary information to future generations of cells and control most cell activities.

2. All of the cell except the nucleus is the cytoplasm.

   a. The cell is surrounded by a "cell membrane" which allows certain materials to pass into and out of the cell.

   b. An irregular channel called the "endoplasmic reticulum" connects the nucleus with the outside of the cell and allows passage of materials.

   c. Tiny structures called "ribosomes" are distributed along the endoplasmic reticulum; the ribosomes manufacture protein.

   d. Irregularly shaped structures, called "Golgi bodies" are believed to store proteins or manufacture glandular secretions.

   e. Mitochondria, long sausage-shaped structures in the cytoplasm, convert glucose and oxygen into chemical energy which the cells need for all their activities.

F. Cells perform many functions which allow the body to exist as an organism.

1. Chemical energy is constantly produced in most body cells.

   a. Glucose from the small intestines and oxygen from the lungs enter the mitochondria in the cell by way of the blood.

   b. Those materials are converted into energy and waste products (carbon dioxide, urea, etc.).

   c. The energy is used by the cell, and the wastes go into the blood and are then removed from the body.

2. New materials are produced by the cells so that the body can grow and can replace old or used up materials.

   a. Protein is the body-building material made by the cells.

   b. Protein is manufactured by the ribosomes from amino acids which come from the small intestines via the blood.

3. The cell is able to divide into two cells, thereby permitting replacement of old cells and growth of the body. The dividing process is called "mitosis."

   a. Before a cell begins to divide, its chromosomes duplicate themselves, producing two identical sets of chromosomes.

   b. As the cell divides, one set of chromosomes is incorporated into each new cell, thereby producing two new cells exactly like the original cell.

Instructional Aids

Films:

1. The Cell, Structural Unit of Life, Coronet Films.
2. Cell Biology: Life Functions, Coronet Films.
3. Cell Biology: Structure and Composition, Coronet Films.

References

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1. Sproul, Edith. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959, pp. 1-10.
2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964, Ch. 22.

For Students:

1. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.
2. The Body, Life Science Library, Ch. 3.

LESSON TWO

THE SKELETAL SYSTEM

Concept: The skeleton is designed to support, to protect, and to facilitate movement of the body parts.

Content

A. The bones of the skeletal system are designed to support the body's weight.

1. The backbone and the long bones of the leg and arm are special bones for support.

2. These bones are used to support the body weight during sitting, standing, walking, pushing and pulling.

B. The skeletal system protects other body structures.

1. The skull protects the brain.

2. The rib cage protects the heart and the lungs.

3. The vertebrae protect the spinal cord.

C. The skeletal system is designed to allow movement.

1. Bones are moved by muscles.

2. Two bones that meet form a joint.

    a. The ends of these bones are lined with a smooth layer of cartilage.

        (1) Cartilage reduces friction.

        (2) Cartilage helps absorb shock.

Note: (3) Cartilage also forms the framework of the ear and nose.

    b. Joints are lubricated by a liquid called synovial fluid.

3. Different types of joints determine the kind of movement.

    a. Ball and socket (shoulder, hip) permit circular movement.

    b. Hinge (fingers, toes, knee, elbow, jaw) permit back and forth movement.

    c. The pivot joint in the head allows for side to side movement.

    d. Gliding (wrist, ankle) occurs in shifting of small bones.

e. Partially movable (ribs, vertebrae) permit a sliding movement.

f. Immovable (skull, hipbone) allow for growth and absorbing shock.

4. Bones are held together at the joints by tough, elastic tissue called ligament.

D. Bones are designed for specific functions.

1. They are shaped as hollow tubes, the tube structure providing for the greatest strength with the least possible weight.

2. Manufacture of blood cells occurs in marrow, found in the bone cavity.

a. Manufacture of blood cells occurs in the skull, ribs and vertebrae.

b. In children, the long bones of the arms and legs manufacture blood cells.

Instructional Aids

Charts:

A wall chart of the skeletal system

Chart from student reference No. 1 below, p. 3.

Films:

The Skeleton, Encyclopedia Britannica Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959, Ch. 14.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.

2. Asimov, I. The Human Body. New York: Signet, 1963, Ch. 2-3.

3. Brandwein, Paul F. Life: Its Forms and Changes. New York: Harcourt, Brace, Ch. 5.

4. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.

References (cont'd)

5. Nourse, Alan E. The Body. New York: Time, Inc., 1964, Ch. 3.

6. Ravielli, Anthony. Wonders of the Human Body. New York: Viking Press, 1954.

7. Samechson, J. The Armor Within Us. New York: Rand McNally.

8. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964.

LESSON THREE

THE MUSCULAR SYSTEM

Concept: The muscular system furnishes the power of movement in the body.

Content

A. The various functions of the muscular system are performed by different types of muscles.

  1. Voluntary or skeletal muscles can be controlled by conscious thought.

    a. Skeletal muscles allow movement of the skeleton during walking, running, stopping, and changing position.

    b. Skeletal muscles assist in breathing (intercostal muscles).

    c. Voluntary muscles consist of striated fibers (cells).

  2. Skeletal muscles help generate body heat.

    a. All muscular contractions provide heat.

    b. Shivering produces heat to help maintain body temperature in a cold environment.

  3. Involuntary muscles work without conscious thought.

    a. They are used to regulate movement of body substances in the digestive system and in the blood vessels.

  4. Cardiac muscle.

    a. Cardiac muscle functions like involuntary muscles.

    b. Cardiac muscle is found only in the heart.

    c. Cardiac muscle consists of cardiac muscle fiber.

B. Muscles are designed to pull the bones to create movement.

  1. A muscle bundle is made up of many fibers.

  2. Big muscles are made up of bigger bundles of fibers.

  3. Muscle bundles are attached to bones by connective tissue called tendons.

  4. Muscles perform their work by contracting, getting shorter and thicker.

  5. Muscles usually work in pairs to produce movement.

6. A number of fibers in each muscle are always contracted, resulting in muscle tone.

7. Muscles receive the message to contract from the nervous system.

Instructional Aids

Charts:

Use wall charts of the muscular system.

Charts from student reference Nos. 1, 4.

Films:

Muscular System, Coronet Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.

2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964, Ch. 23.

For Students:

1. American Medical Association. The Wonderful Human Machine, The Association, 1961.

2. Asimov, I. The Human Body. New York: Signet Books, 1963, Ch. 4.

3. Brandwein, Paul F. Life: Its Forms and Changes. New York: Harcourt Brace, 1968, Ch. 6.

4. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.

5. Nourse, Alan E. The Body. New York: Time, Inc., 1964, Ch. 3.

6. Ravielli, Anthony. Wonders of the Human Body. New York: Viking Press, 1954, Pt. 2.

LESSON FOUR

THE SKIN

Concept: The skin is the protective organic layer which completely covers the body.

Content

A. The skin performs a number of important functions.

1. The skin protects the body against

   a. the invasion of bacteria,

   b. an injury to more sensitive tissues in the body,

   c. ultraviolet rays of the sun.

2. The skin provides a proper internal environment by

   a. protecting the body against excessive loss of moisture,

   b. regulating body temperature,

   c. removing body wastes through sweat glands.

3. The skin serves as an organ or perception for cold, warmth, touch, deep pressure, and pain sensations.

   (See Part B of "Nervous System" for more detail.)

B. The skin is divided into two main layers of tissue.

1. Epidermis is a protective layer.

   a. The outer layer of epidermis is composed of tough, dead cells.

   b. In the inner layer the new cells are formed.

   c. The old cells are constantly being pushed outward by new cells.

2. The dermis is the "true skin."

   a. The dermis varies in thickness in different parts of the body.

   b. It contains blood vessels, nerves, nerve receptors, hair follicles, sweat glands, and oil glands.

(1) Occasionally oil glands become plugged by an overgrowth of cells.

(2) Oil filling the ducts forms blackheads or pimples.

3. Fingernails and toenails are outgrowths of the skin.

Instructional Aids

Charts:

Overhead transparency from chart on next page.

Wall charts.

Charts from student reference No. 1.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959, Ch. 15.

2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964, Ch. 22.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.

2. Asimov, I. The Human Body. New York: Signet, 1963, Ch. 10.

3. Bauer, William W. Health for All. Glenview, Illinois: Scott Foresman, 1965, pp. 46-50.

LESSON FIVE

THE CIRCULATORY SYSTEM

Concept: The circulatory system distributes blood to all parts of the body.

Content

A. Plasma, the liquid portion of the blood, carries materials to the cells.

1. Plasma is mainly composed of water (about 90%) which has the following materials dissolved in it: minerals or salts, dissolved gases, nutrients, hormones, enzymes, and antibodies.

2. Plasma carries wastes from the cells.

B. The solid portion of the blood contains formed elements, each having a specific purpose.

1. Red blood cells are responsible for the transportation of oxygen and carbon dioxide.

2. The chief function of white blood cells is to protect the body against disease.

3. Platelets are important in starting the process of blood clotting.

C. There are different types of blood.

1. Some blood types cannot be safely combined because of the possibility of agglutination (clumping) of red blood cells.

2. Blood types that can be safely combined are called compatible.

3. Four basic blood types are A, B, AB, and O.

4. Type O is considered the universal donor and can be given to any other blood type.

D. The blood circulates through the body.

1. The heart is a double pump responsible for circulating the blood.

   a. The heart is a bundle of muscle fibers.

   b. The heart is divided into four chambers.

      (1) Right atrium (auricle) receives used blood returning from the body.

(2) Right ventricle pumps used blood through the pulmonary artery to the lungs.

(3) Left atrium (auricle) receives fresh blood returning from the lungs via the pulmonary vein.

(4) Left ventricle pumps fresh blood through the main artery (aorta) to the body.

c. The heart averages 72 contractions per minute.

d. The heart rests between contractions.

e. The rate of the heartbeat is regulated by the brain.

2. The blood travels through a system of vessels.

a. Blood leaves the heart through arteries.

b. Arteries branch into smaller vessels called arterioles.

c. Arterioles divide into the smallest vessels called capillaries.

(1) Capillaries are only one cell in thickness.

(2) Capillaries carry blood to individual cells.

(3) Capillaries are so thin that red blood cells must pass through in single file.

d. Capillaries connect with venules.

e. Venules connect with veins through which blood will return to the heart.

E. The lymphatic system assists the circulatory system.

1. The lymph system returns to the circulatory system fluids that have been squeezed out of the capillaries.

2. Lymph nodes act as a filter for bacteria and other foreign material.

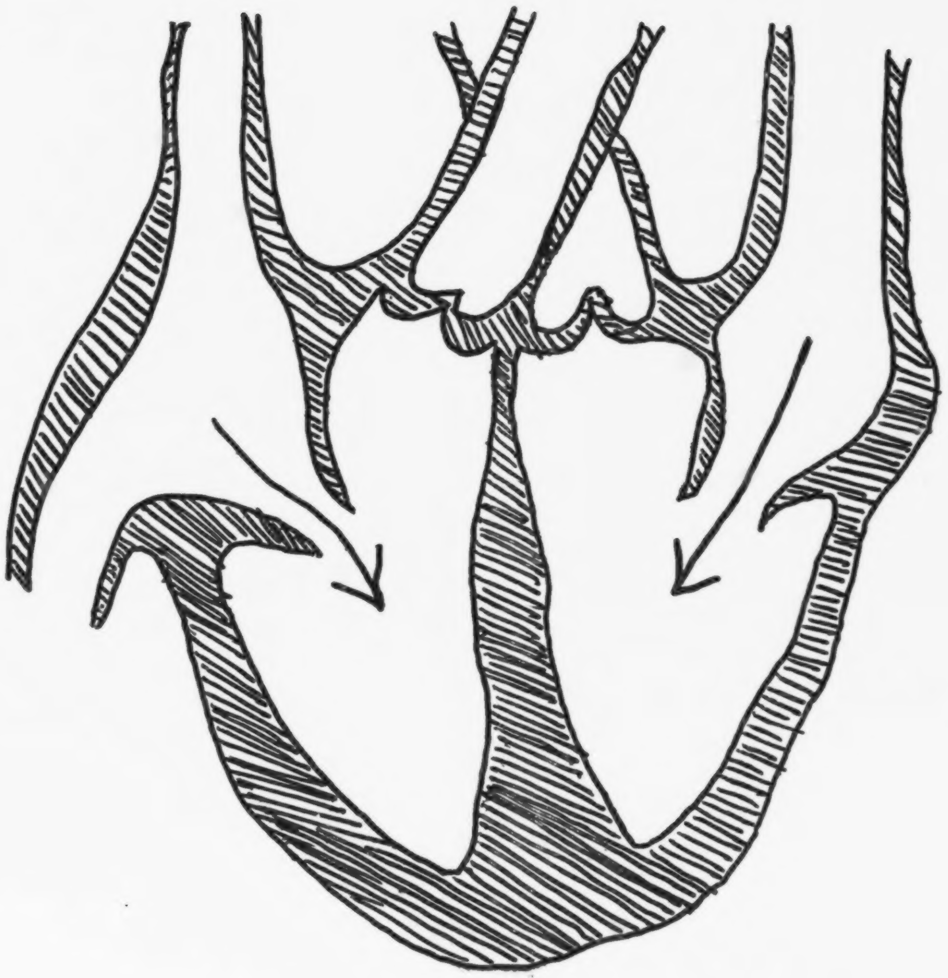
Instructional Aids

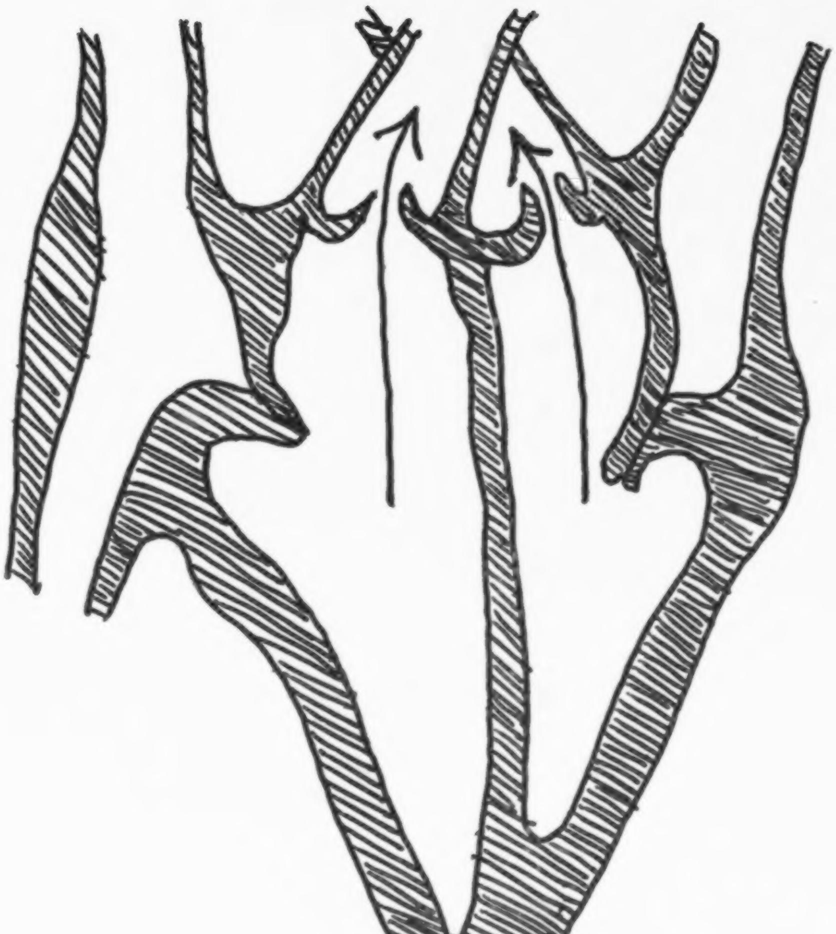
Charts:

Wall chart of circulatory system.

Overhead transparency from student reference Nos. 1, 3.

THE HEART





Instructional Aids (cont'd)

Films:

1. Circulation: Why and How, Churchill Films.
2. Heart, Lungs, and Circulation, Coronet Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.
2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.
2. Asimov, I. The Human Body. New York: Signet, 1963.
3. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.

LESSON SIX

THE RESPIRATORY SYSTEM

Concept: The respiratory system is structured to permit the exchange of gases between the body and the atmosphere.

Content

A. The process of breathing involves getting air containing oxygen into the body (lungs) and removing air containing waste gases, carbon dioxide and water vapor from the body.

B. Breathing is controlled by a respiratory center in the brain, the medulla.

   1. Breathing can be stimulated by the increase of carbon dioxide in the blood or the decrease of oxygen in the blood.

   2. The respiratory center stimulates the diaphragm.

      a. The diaphragm is a dome-shaped sheet of muscle fibers.

      b. The diaphragm is attached to the spinal column in the back of the breastbone in front, and the lower ribs on the side.

      c. The contraction of the diaphragm creates a partial vacuum in the chest cavity, which causes air to flow into the lungs.

      d. Relaxation of the diaphragm forces air out of the lungs.

   3. Intercostal muscles also assist in the breathing action.

C. The respiratory system consists of several different structures.

   1. Air enters the body through the nose.

      a. The nose is lined with mucus and cilia.

      b. These structures warm and filter the air.

   2. Air passes through the larynx into the trachea.

      a. The trachea extends into the chest.

      b. The trachea divides into two smaller tubes called bronchi.

   3. The bronchi enter the lungs.

      a. The bronchi divide into smaller branches called bronchioles.

      b. These bronchioles divide into tiny air sacs called alveoli.

4. The alveoli are designed for exchanging gases.
    a. The alveoli walls are only one cell in thickness.
    b. Alveoli are surrounded with capillaries.
    c. The alveoli and the capillaries exchange gases by a process of diffusion.

Instructional Aids

Charts:

Wall charts: The Respiratory System.

Charts from A.M.A. publication listed below.

Films:

Respiratory System, Coronet Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.
2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.
2. Asimov, I. The Human Body. New York: Signet, 1963.
3. Brandwein, Paul F. Life: Its Forms and Changes. New York: Harcourt Brace, 1968, Ch. 5.
4. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.

LESSON SEVEN

THE NERVOUS SYSTEM

Concept: The nervous system controls and coordinates all of the body's activities.

Content

A. The central nervous system consists of the brain and the spinal cord.

1. The brain is divided into three main regions.

   a. The cerebrum controls learned behavior, memory, and thoughts for voluntary actions.

   b. The cerebellum controls and regulates muscle contraction (coordination).

   c. The medulla connects the brain with the spinal cord and controls involuntary impulses (breathing, heart rate, etc.).

2. The spinal cord carries messages between the brain and lower portions of the body and controls reflex actions.

B. The peripheral nervous system consists of 31 pairs of spinal nerves and 12 pairs of cranial nerves.

1. Spinal nerves originate from the spinal cord and consist of sensory neurons for receiving impulses and motor neurons for sending impulses.

2. Spinal nerves work in pairs that send and receive messages from only one part of the body.

3. Cranial nerves originate in the brain and their impulses by-pass the spinal cord. (See Part D. The Human Sense Organs, below for more information on cranial nerves.)

C. The autonomic nervous system is divided into two parts which control involuntary actions.

1. The sympathetic system speeds up body processes.

2. The parasympathetic system relaxes muscles and slows down body processes.

D. Without sense organs (eyes, ears, nose, etc.) one would learn very little about his environment.

1. The eye is designed to receive light stimulation and send impulses to the brain.

    a. The sclera is a tough, white, protective covering on the outside of the eyeball.

    b. The retina is the inside coating of the eyeball made of sensitive nerve tissue.

        (1) It is really an extension of the optic nerve.

        (2) Images are formed on the retina.

    c. The cornea is a transparent covering over the front of the eyeball.

        (1) It protects the iris and pupil.

        (2) It is actually an extension of the sclera.

    d. The iris is the colored portion of the eye.

        (1) It is a circular, muscular layer at the front of the eye.

        (2) These muscles control the opening and closing of the pupil.

    e. The pupil is an opening in the iris which lets light pass through.

        (1) Bright light decreases the size of the pupil.

        (2) Dim light increases the size of the pupil.

    f. The lens lies directly behind the pupil and helps focus images on the retina.

        (1) The lens is very elastic so that it can change thickness.

        (2) The lens flattens for far view; it thickens for near vision.

    g. The vitreous humor is a jelly-like substance in back of the lens which gives the eyeball shape and keeps it from collapsing.

    h. The optic nerve takes the impulse of an image from the retina to the brain.

2. The ear detects air vibrations that we call sound waves.

    a. Sound is a series of vibrations.

    b. Hearing is the sensation created in the brain by these vibrations.

    c. There are several parts of the ear that are involved in hearing.

(1) The outer ear consists of two parts.

(a) The pinna, a flap on the side of the head receives and directs sound waves into the auditory canal.

(b) The auditory canal carries sound waves to the middle ear.

(2) The middle ear consists of two parts.

(a) The eardrum is a delicate membrane that separates the outer ear from the middle ear and which vibrates when stimulated by sound waves.

(b) The hammer, anvil, and stirrup (ossicles) are three small bones which form a chain connecting the eardrum and the oval membrane of the inner ear.

(3) The inner ear is the actual hearing portion.

(a) The inner ear consists of the cochlea, a small-shaped, membrane-lined, fluid-filled, bony canal that contains nerve endings.

(b) As the oval membrane (the membrane separating the ossicles from the liquid in the cochlea) vibrates, the fluid of the cochlea is set into vibration.

(c) These vibrations stimulate the nerve cells which transmit an impulse along the auditory nerve to the brain.

(4) The brain receives the impulse and interprets it as a sound.

3. The tongue has many raised bits of tissue called taste buds.

a. Taste buds that are susceptible to one type of taste are concentrated in a specific area of the tongue (e.g., "sweet" is located at the tip of the tongue).

b. The four types of taste are salty, sweet, sour and bitter.

c. One cannot taste materials that are not in solution.

4. The sense organ for smell is the nerve endings of the olfactory nerve.

a. These nerve endings are located in the uppermost region of the nasal passages.

b. When odor reaches these endings, the olfactory nerve sends an impulse to the brain.

(1) The brain then interprets or identifies the odor.

(2) The number of different odors is not known.

c. Since the nose is so close to the mouth and since the nasal cavity communicates with the mouth cavity, much of what we eat is smelled as well as tasted.

5. The sense of touch is located in the nerve endings in the lower skin.

   a. The sensations involved in touch are pain, heat, cold, pressure, traction, and tickle.

   b. Nerve endings for touch are located all over the body, being most numerous in the lips and finger-tips.

   c. The sense of touch serves several purposes.

      (1) We learn about size, shape, and texture of objects by handling them.

      (2) Pleasurable sensations are enjoyed by the sense of touch.

      (3) Touch alerts us to the dangers of excessive heat, cold, pain, pressure, etc.

Instructional Aids

Charts:

Wall charts on the nervous system.

Charts from A.M.A. publication listed below.

Films:

1. Nervous System, Encyclopedia Britannica Films.
2. Sense Organs, Coronet Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.
2. Villee, Claude A., Jr. Biology. Philadelphia: Sanders Press, 1964.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.
2. Asimov, I. The Human Body. New York: Signet, 1963, Ch. 5.
3. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, Publishers, 1961.

LESSON EIGHT

THE DIGESTIVE SYSTEM

Concept: The digestive system changes food from a solid to a liquid form so that the food can be absorbed into the bloodstream.

Content

A. Digestion is basically the changing of a food from solid to a liquid.

  1. Digestion requires the mechanical actions of chewing, swallowing, and the internal movement of particles.

  2. Chemicals (enzymes) act on food to speed up its breakdown.

B. The organs of digestion are classified into two parts.

  1. Food passes through the alimentary canal.

  2. The accessory organs, liver and pancreas, secrete into the alimentary canal, but no food passes through them.

C. Food is digested in the alimentary canal.

  1. Digestion begins in the mouth.

    a. Chewing allows the teeth to break down larger food particles.

    b. Chewing mixes food with saliva.

      (1) Saliva is secreted by salivary glands.

      (2) The sight, smell, or thought of food stimulates the flow of saliva.

      (3) Saliva contains the enzyme amylase, which begins the chemical change of starch into sugar.

  2. The esophagus serves as a food passageway to the stomach.

    a. Its secretion, mucus, serves as a lubricant.

    b. Two sets of muscles function in moving the food particles to the stomach. (peristaltic action)

  3. The stomach serves as a reservoir and as a digestive organ.

    a. The walls have three layers of muscles which squeeze, twist, and churn the food.

    b. The stomach secretes digestive juices.

        (1) Hydrochloric acid which dissolves minerals and destroys bacteria.

        (2) Gastric juice (enzyme-pepsin) which starts breaking down proteins.

    c. The food, broken down into something like a thick soup, passes through the pyloric valve into the small intestine.

4. The small intestine is the most important digestive organ.

    a. Glands secrete digestive juices into the small intestine.

        (1) The liver produces bile for the digestion of fats.

        (2) The pancreas produces three enzymes which help finish breaking down fat, protein, and carbohydrate.

    b. In the small intestine liquid food is absorbed by the capillaries and lymphatics of the villi and distributed throughout the body.

5. The large intestine (colon) is the last part of the alimentary canal.

    a. Materials not absorbed in the small intestine enter the colon.

    b. Excess liquids are drained off and the solid wastes are eliminated by the body.

Instructional Aids

Charts:

Wall charts on the digestive system.

Charts from A.M.A. publication listed below.

Films:

Digestion, Parts 1 and 2, United World Films. Available from C.I.C. Film Library.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.

2. Villee, Claude A. Biology. Philadelphia: Sanders Press, 1964.

References (cont'd)

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.

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3. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, 1961.

LESSON NINE

THE EXCRETORY SYSTEM

Concept: The excretory system performs three important functions for the body.

Content

A. All these functions relate directly to the blood.

1. Poisonous waste materials, particularly nitrogenous wastes (urea, uric acid, ammonia, etc.) are removed from the blood.

2. The amounts of most chemicals in the blood are regulated.

3. The water content and blood volume of the body are regulated.

B. The principal organs of excretion are the kidneys. (The remaining parts of the system merely serve to move and store the waste products.)

1. Each person has two kidneys, one located on each side of the spine just below the ribs.

2. The kidney is a bean-shaped organ about four inches long.

3. Each kidney consists principally of about a million tiny filtering tubes, or units, called "nephrons."

4. About one-fourth of all the blood pumped by the heart passes through the kidneys to be purified.

C. The purification of the blood by the kidneys is performed as a double process (filtration and reabsorption).

1. During the filtration process much of the water and most of the dissolved substances (urea, salts, glucose, etc.) are filtered out of the blood into the filtering tubes.

2. During the reabsorption process most of the water and all usable substances are reabsorbed from the filtering tubes back into the blood.

3. Each substance is reabsorbed up to a specific level for that substance. The remaining water, excess amounts of usable substances, and chemical wastes form a substance called "urine."

4. The urine flows from the kidneys to the bladder through the ureters, where it is stored and periodically removed through the urethra.

Instructional Aids

Film:

Excretory System, Coronet Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.
2. Villee, Claude A. Biology. Philadelphia: Sanders Press, 1964.

For Students:

1. American Medical Association, The Wonderful Human Machine, The Association, 1961.
2. Brandwein, Paul F. Life: Its Forms and Changes. New York: Harcourt Brace, 1968.
3. Keen, Martin. The How and Why Wonder Book of the Human Body. New York: Grosset and Dunlap, 1961.

LESSON TEN

THE ENDOCRINE SYSTEM

Concept: The endocrine system serves as the major means of controlling the body's activities.

Content

A. The endocrine system works together with the nervous system to control and coordinate all body activities.

   1. The nervous system enables the body to adjust to rapid changes in the environment.

   2. The endocrine system regulates body adjustments that generally last for a longer duration of time such as body growth and sexual maturation.

B. The endocrine system is composed of ductless glands.

   1. Any cell or organ that secretes a substance is called a gland.

   2. Glands that secrete directly into the bloodstream are called ductless.

   3. The endocrine glands secrete substances called hormones.

      a. Hormones are chemicals that influence body processes.

      b. Hormones are released directly into the bloodstream and are carried to the cells.

C. The endocrine glands regulate many vital processes.

   1. The pituitary (master gland) produces many hormones which directly control other endocrines, control overall growth of the body and control other body functions.

   2. The hypothalamus regulates body temperature and controls sleep and waking.

   3. The thyroid produces the hormone thyroxin, which regulates metabolism (all chemical processes that take place in the cell).

   4. The parathyroid produces the hormone parathormone which regulates the amount of calcium and phosphorus in the blood.

      a. These minerals are important in building bones and teeth.

      b. Calcium is necessary for the proper function of the nervous system.

5. The pancreas (Islets of Langerhans) produces the hormone insulin, which regulates the use of sugar in the body.

6. The adrenals produce the hormone adrenalin, which brings body processes into action quickly (e.g., heart beats faster, muscle power is increased).

7. The gonads produce the sex hormones.

    a. In the female the ovaries produce estrogen and progesterone.

    b. In the male the testes produce testosterone and androsterone.

    c. These hormones are actually produced in both sexes, but male sex hormones predominate in men; female hormones in women.

    d. Sex hormones influence the development of body hair, the development of muscles, the change of voice, the maturation of sex organs, and the development of sexual urges.

Instructional Aids

Charts:

Wall chart illustrating endocrine system.

Filmstrip:

Human Glandular System, S.V.E.

Film:

Endocrine Glands, Encyclopedia Britannica Films.

References

For Teachers:

1. Sproul, Edith E. The Science Book of the Human Body. New York: Pocket Books, Inc., 1959.

2. Touner, James M. Growth. New York: Time, Inc., 1964.

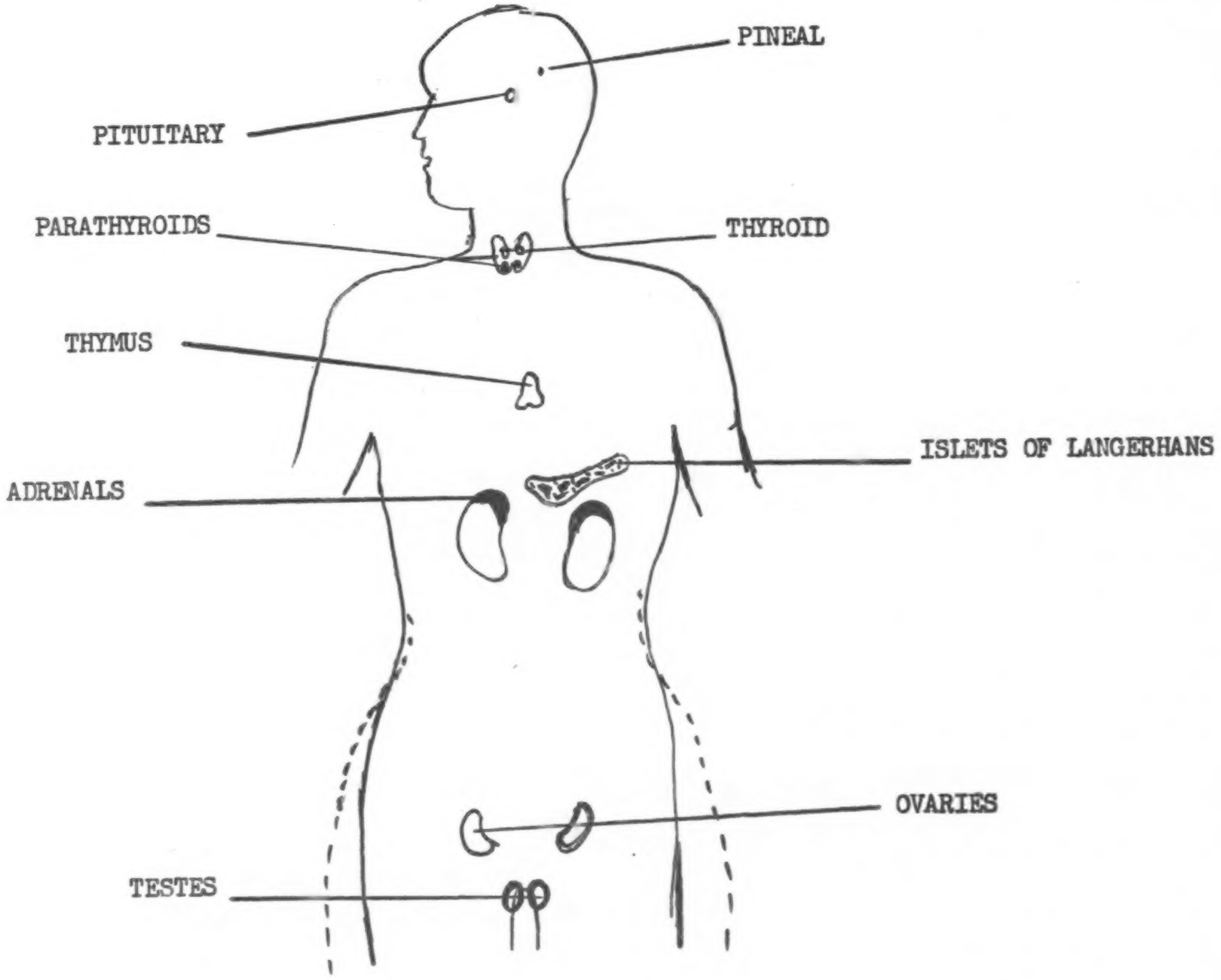
3. Villee, Claude A. Biology. Philadelphia: Sanders Press, 1964.

For Students:

1. Nourse, Alan E. The Body. New York: Time, Inc., 1964, Ch. 8.

2. Riedman, Sarah H. Our Hormones and How They Work. New York: Abelard-Schuman, 1959.

3. Weart, Edith L. Story of Your Glands. New York: Coward-McCann, 1963.


PINEAL
PITUITARY
PARATHYROIDS
THYROID
THYMUS
ISLETS OF LANGERHANS
ADRENALS
OVARIES
TESTES

ENDOCRINE SYSTEM

LESSON ELEVEN

THE REPRODUCTIVE SYSTEM

Concept: The reproductive function is a natural biological occurrence. All living things must produce new organisms like themselves in order to continue as a species. Life comes only from life.

Content

A. There are two basic types of reproduction.

  1. Asexual reproduction is found in some plants and animals. This type of reproduction involves only one parent.

    a. Strawberries reproduce by means of "runners."

    b. Bananas and seedless fruits reproduce vegetatively by means of "cuttings."

    c. The paramecium reproduces by a dividing process called "fission."

    d. Yeasts and hydras reproduce by "budding."

  2. Sexual reproduction is the production of a new organism through the joining of two special cells, called gametes, from two parents.

    a. The joining of a sperm cell from the male and an egg cell from the female is called "fertilization."

    b. Fertilization in some animals can take place outside the body after eggs have been laid (fish and frogs).

    c. Internal fertilization (within the body of the female) can result in production of fertilized eggs (birds) or the birth of living young (mammals).

    d. The reproductive systems of mammals are the most highly developed.

      (1) Protection is furnished to the embryo and fetus during a long period of gestation (internal growth).

      (2) Provision is made for nourishment of the young animal after birth.

B. The plan for human reproduction is typical of that of other mammals.

  1. A new life begins with the union of a sperm cell with an egg cell (fertilization).

    a. Sperm cells are produced by the male.

    b. Egg cells are produced by the female.

2. The male and female bodies are so formed as to make possible the union of the two sex cells.

3. The fetus lives and develops within the female until it is ready to exist in an external environment.

4. When sufficiently developed, the baby is born.

C. The male reproductive system is designed to produce sperm cells and introduce them into the female reproductive system.

  1. Two testes (singular: testis), located in a sac-like structure (scrotum) at the lower end of the male torso, produce sperm cells.

    a. Each testis is oval in shape, and about the size of a small plum.

    b. Each testis contains about a thousand coiled tubes in which new sperm cells are constantly being produced. The production of sperm cells begins at puberty.

  2. The penis has a dual function.

    a. It permits liquid wastes (urine) to leave the body (from the bladder).

    b. It permits the discharge of sperm cells into the female reproductive system.

    c. Entry of the penis into the female is made possible because it is composed mostly of spongy erectile tissue. When this tissue is filled with blood, as occurs during sexual excitement, erection occurs.

  3. Three supplementary structures (the prostate gland, the seminal vesicles and Cowper's glands) produce fluids which activate the sperm cells and supply a liquid medium in which the sperm can travel. The liquid plus the sperm is the semen.

D. The female reproductive system is designed to produce egg cells, permit egg cells to join with sperm cells, provide an environment in which the embryo can develop until ready for birth, allow the baby to be born, and nourish the baby during its first months.

  1. The ovaries are the egg-producing organs in the female.

    a. Ovaries are bean-shaped, about 1.5 inches long, and are located toward the back of the abdominal cavity, one on either side of the body.

    b. Each ovary contains several hundred thousand eggs at the birth of the female; no new eggs are produced during the female's life.

    c. Beginning at puberty, one egg per month matures and leaves an ovary in a process called "ovulation"; occasionally more than one egg matures at the same time.

2. Two fallopian tubes (oviducts), one for each ovary, lead from the ovaries to the uterus.

    a. Hair-like cilia which line the tubes move the egg from the vicinity of the ovary through the tube and into the uterus.

    b. Joining of the sperm and the egg usually takes place in a fallopian tube.

3. The uterus (womb) is the organ in which the embryo develops until ready for birth.

    a. The uterus is a pear-shaped organ.

    b. The fallopian tubes enter at the sides of the upper end of the uterus.

    c. The lower part of the uterus, the cervix, projects a short distance into the vagina, and furnishes a passage between the uterus and the vagina.

    d. The thick, softly lined walls of the uterus are capable of stretching to accommodate a growing baby.

4. The vagina is an elastic canal, or tube, which leads from the uterus to the outside of the body.

    a. It serves as a passageway for sperm cells to enter the body.

    b. It is the canal through which the baby leaves the mother's body at birth.

E. Fertilization takes place when the nucleus of a sperm cell joins with the nucleus of an egg cell.

1. During mating, or sexual intercourse, the erect penis of the male enters the vagina of the female and ejaculates (discharges) about 200 million sperm cells into the vagina.

2. Sperm cells are able to swim, and thus move from the vagina through the uterus and into the fallopian tubes.

3. If the sperm cells meet an egg cell in the upper part of a fallopian tube, fertilization can take place.

4. The chemical action of thousands of sperm cells is required to break open the outer layer of an egg cell, but usually only one sperm cell enters the egg cell and joins it.

5. When the two gametes (sperm and egg) join, a zygote, a fertilized egg, is formed.

6. When the zygote begins to grow and develop, it is called the embryo.

7. The growing embryo is moved down the fallopian tube and into the uterus, where it attaches to the wall. This is called implantation (embedding). The moving down and implantation require about one week.

F. Growth, development and birth of the baby complete the reproductive process.

1. Through the process of mitosis (cell division) the embryo grows larger, until after a period of about 280 days, it is ready for birth. After the third month of pregnancy, the growing baby is called a fetus, rather than an embryo.

2. Very early in the embryo's growth, its cells begin to specialize (differentiate) and form the various organs and systems of the baby's body. This is called "development."

3. Many organs and systems function long before birth; for example, the heart begins to beat about four weeks after fertilization.

4. Nourishment and removal of wastes take place through the placenta. This is an organ which connects the body with the mother before birth. The placenta allows the blood supply of the mother to come in close contact with the baby's blood supply so that an exchange of nutrients and wastes can take place. The bloods of the mother and baby do not actually mix.

5. When the fetus is fully developed, the baby is born. The cervix of the uterus and the walls of the vagina are able to stretch sufficiently to allow passage of the baby into the outside world.

6. The mother is usually able to nourish the baby during its first months after birth. The breasts, the organs which perform this function, contain glands for the manufacture of milk.

Instructional Aids

Charts:

1. Transparencies from illustrations provided in this volume in K-4 and high school sections.

2. Wall chart illustrating reproductive system.

Films:

1. Boy to Man, Churchill Films. Available from C.I.C. Film Library.

2. Girl to Woman, Churchill Films. Available from C.I.C. Film Library.

3. From Generation to Generation, McGraw-Hill.

4. Human Reproduction, McGraw-Hill. Available from C.I.C. Film Library.

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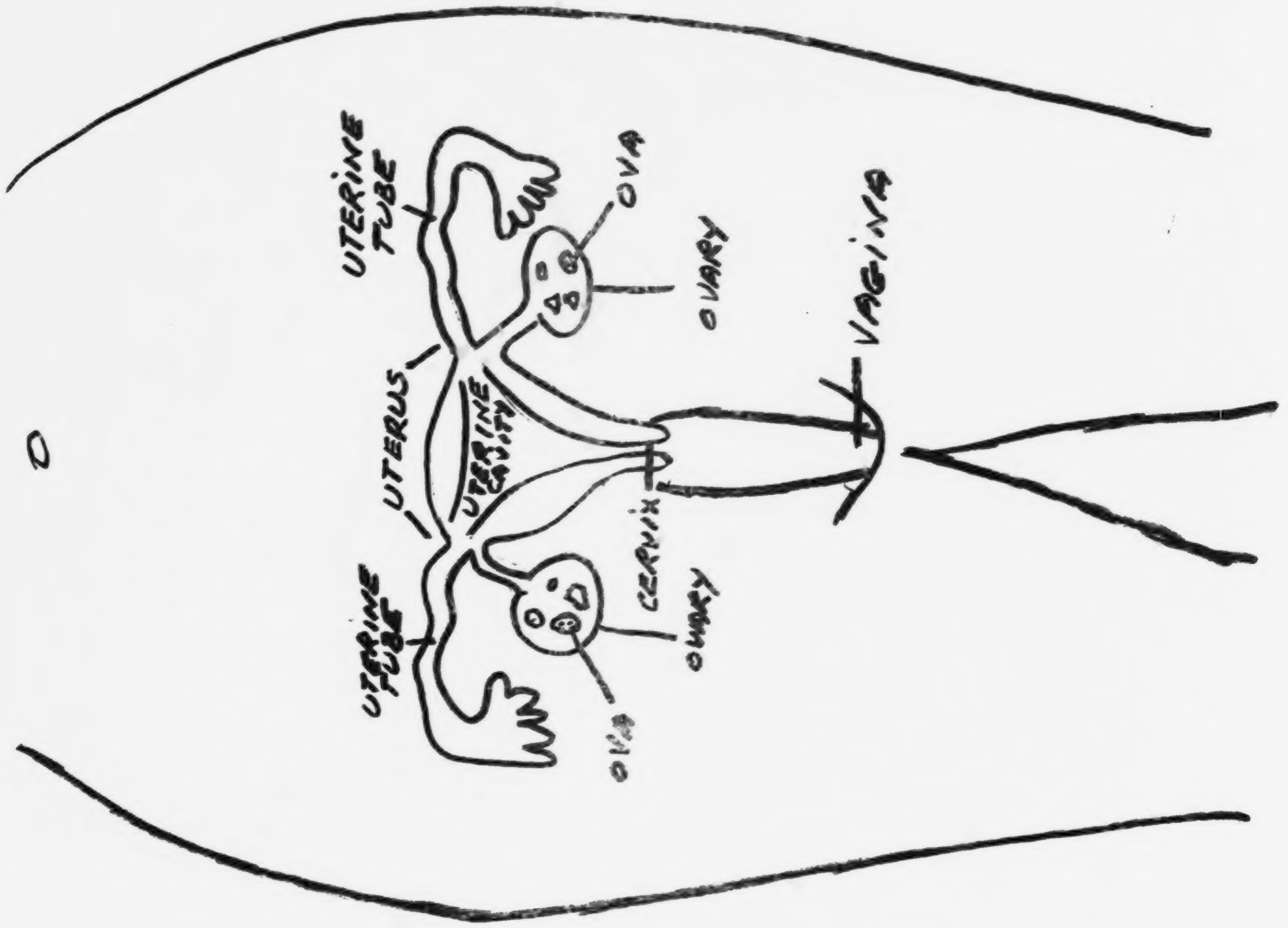
MALE AND FEMALE REPRODUCTIVE SYSTEMS


UTERINE TUBE
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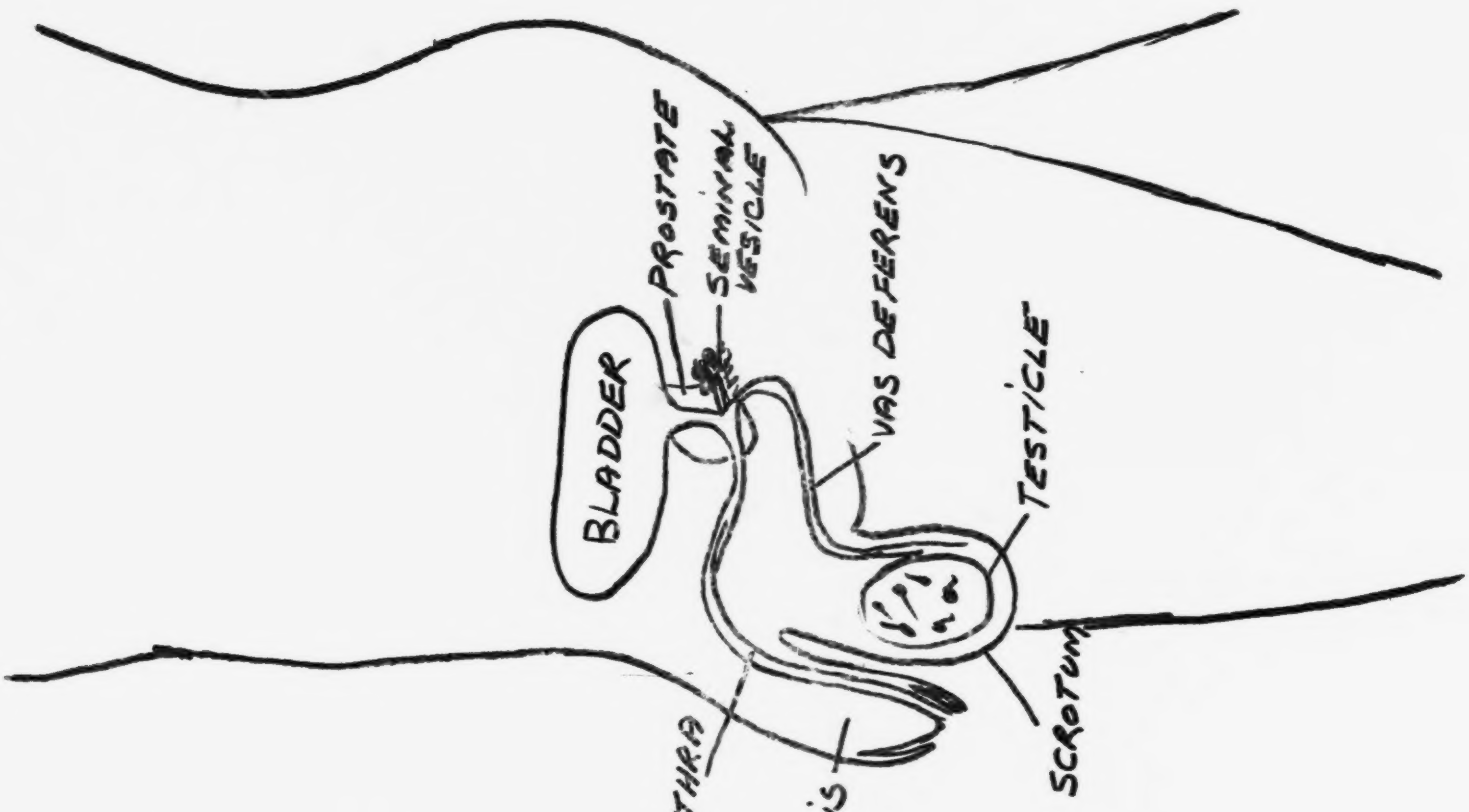
PROSTATE
SEMINAL VESICLE
VAS DEFERENS
TESTICLE
BLADDER
URETHRA
PENIS
SCROTUM

4

Instructional Aids - Films (cont'd)

5. Miracle of Reproduction, Sid Davis Films.
6. Story of Menstruation, Walt Disney Films.
7. Your Body During Adolescence, McGraw-Hill.

References

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1. Read Unit III of Part III (high school) of this program.
2. Lerrigo, Marion, and Southard, Helen. Approaching Adulthood. Chicago, Ill.: American Medical Association, 1966.
3. Lerrigo, Marion, and Southard, Helen. Facts Aren't Enough. Chicago, Ill.: American Medical Association, 1962.
4. Sproul, Edith. The Science Book of the Human Body. New York: Pocket Books, 1955, Ch. 10-12.
5. Swanson, Carl. The Cell. New York: Prentice-Hall, 1964, Ch. 6.

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1. American Medical Association. The Miracle of Life. Chicago: AMA, 1967.
2. Asimov, Isaac. The Human Body. New York: Signet, 1963, Ch. 11.
3. Boyer, Donald, and Brandt, Elizabeth. Human Growth and Reproduction. River Forest, Ill.: Laidlaw Brothers, 1967.
4. Pfeiffer, John. The Cell. New York: Time, Inc., 1964, Ch. 3.
5. Tanner, James M. Growth. New York: Time, Inc., 1965, Ch. 2-4.

LESSON TWELVE

GROWTH AND DEVELOPMENT

Concept: While the pattern of development from childhood to adulthood is generally common to all people, differences between the two sexes and among individuals are determined by genic and environmental factors.

Content

A. Various parts of the body go through growth periods at different times until adult size and proportions are reached.

1. The first stage of development is from infancy through early childhood.

    a. During the first year, a baby's growth is very rapid.

        (1) He triples in weight.

        (2) His length increases by one-half.

    b. The baby's growth rate is slightly slower through the second to the fifth year.

    c. Through the years five to ten, physical growth is slow and even.

2. The second stage of the development of children is the pre-teen (9 to 12) years.

    a. The slow steady growth of some children may continue.

    b. Girls may begin a growth spurt.

        (1) Many girls begin puberty.

        (2) Girls usually begin physical development about two years earlier than boys.

    c. Some boys and some girls do mature earlier than others.

    d. This growth period is marked by an increase in the rate of gain in weight.

3. The third stage of development occurs in the years from twelve to fifteen.

    a. This is the time of the usual teen-age growth spurt (especially for boys).

        (1) Boys begin increasing in height and weight.

        (2) Boys usually begin puberty.

b. Girls usually begin to slow down in growth.

c. Rapid growth may lead to physical awkwardness.

d. All girls and boys go through these periods of growth, but each person may go through them at a different rate or time.

4. The fourth stage of development is that of the late teens, from the years sixteen through twenty.

a. By the late teens growth slows or stops.

(1) Most teens have reached full height and complete physical growth.

(2) Most teens have reached physical sexual maturity.

b. Most adolescents begin rapid growth between the ages of 10 and 17 years which ends between the ages of 15 and 20 years.

B. Puberty is that period in a person's life which brings about changes in appearance and body functions. Though the sexual reproductive organs have been present since birth, puberty is the time sexual maturity begins.

1. Puberty produces many body changes in the male.

a. Axillary and pubic hair begins to grow.

b. Physique develops, shoulders becoming broader in relation to waist and hips.

c. Facila hair (beard) develops along with the growth of some hair on chest, arms, legs, and pubic hair.

d. The voice deepens.

e. The penis and testicles increase in size.

f. Testes mature and begin to function.

(1) Onset of seminal emissions - a result of a natural body function when semen is emitted from an erect penis.

(2) When this happens at night it is referred to as a "nocturnal emission" or "wet dream."

2. Puberty produces many physical changes in the female.

a. Growth of axillary and pubic hair occurs.

b. Hips widen in relation to waist and shoulders.

c. Breasts begin to develop.

d. Some hair tends to grow on legs.

e. Ovaries begin to mature and function and menstruation begins.

  (1) The pituitary gland produces a hormone which causes an egg (ovum) to ripen in one of the ovaries.

  (2) The ovum moves toward the wall of the ovary and bursts out of its follicle. This is called ovulation.

  (3) The ovum travels through fallopian tube to the uterus.

  (4) Each month the uterus becomes thick and spongy and stores up blood (nourishment for a developing baby).

  (5) If the egg has not been fertilized a baby will not develop and the uterine lining will not be needed.

  (6) The unneeded lining disintegrates and passes out of the body through the vagina. This is called menstruation.

  (7) The menstrual cycle functions as follows:

    (a) Each girl has her own unique cycle.

    (b) The average cycle is 28 days.

    (c) Menstruation is irregular at first but settles down to a regular recurring event.

    (d) Each period lasts the same number of days - 4 days average.

    (e) The menstrual cycle may be interrupted temporarily by pregnancy or factors of illness or emotion.

    (f) Menstruation ceases permanently after a hysterectomy (surgical removal of the uterus) or at menopause.

3. Puberty produces an upsurge of sexual feelings.

  a. Differences in growth and development affect the adolescent's emotions. (See Unit Nine - Mental and Emotional Health.)

  b. Masturbation, the manipulation of the sex organs to the degree of orgasm, becomes a familiar phenomenon.

    (1) It is common in boys.

    (2) It frequently occurs in girls.

    (3) It is a phenomenon of adolescence although adults are reported to engage in masturbation.

    (4) It has no harmful physical effects.

    (5) Sometimes it is accompanied by fantasies or daydreams.

(6) Excessive masturbation may be a symptom of deep-seated unhappiness and frustration.

(7) Students of human sexuality and of mental health take the position that masturbation may be regarded as part of the normal process of sexual maturation.

(An excellent reference for teachers is Johnson, Warren R. Masturbation, SIECUS Study Guide No. 3, New York: Sex Information Education Council of the U.S., 1967.)

Instructional Aids

Films:

1. Boy to Man, Churchill Films. Available from C.I.C. Film Library.
2. Girl to Woman, Churchill Films. Available from C.I.C. Film Library.
3. Exploring Your Growth, Churchill Films.
4. It's Wonderful Being a Girl, Disney Films.
5. Your Body During Adolescence, Wexler Films.

References

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1. Lerrigo, Marion, and Southard, Helen. Facts Aren't Enough. Chicago: American Medical Association, 1962.
2. Wilson, Charles C., and Wilson, Elizabeth A. Health, Fitness and Safety. Indianapolis, Ind., 1961.

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1. Byrd, Oliver E. Health. Philadelphia: Saunders, 1966.
2. Lerrigo, Marion, and Southard, Helen. A Story About You. Chicago: American Medical Association, 1966.
3. Neugarten, Bernice. Becoming Men and Women. Chicago: Science Research Associates, 1955.

LESSON THIRTEEN

HEREDITY

Concept: Physical traits and some mental characteristics are inherited by the child from his parents. Heredity means that a trait is determined by a combination of two genes that are transmitted by each of the two parents.

Content

A. Many thousands of inherited traits go toward making up a functioning human body.

  1. Physical characteristics such as hair, eye, and skin color, general body proportions, and the location of internal organs, are inherited.

  2. Mental capacity is believed to be inherited, but environmental factors are crucial in intellectual development.

B. Since each new person grows from a fertilized egg cell, the information for all traits must be contained in the sperm cell and the egg cell.

  1. The part of the cell containing the genetic information is the chromosome.

    a. The nucleus of each sperm cell contains 23 different chromosomes.

    b. The nucleus of each egg cell contains 23 different chromosomes.

    c. Each chromosome in an egg cell has a corresponding chromosome in the sperm cell.

  2. Each trait is transmitted by one or more pairs of hereditary units called genes.

    a. A gene is a complex chemical structure which makes up part of a chromosome.

    b. A gene for a particular trait is always located at the same place on the same chromosome.

    c. A gene for a particular trait can be either dominant or recessive.

      (1) If a child inherits a pair of dominant genes for a trait, the child will show the dominant characteristic for that trait.

      (2) If the child inherits a pair of recessive genes for a trait, the child will show the recessive characteristic for that trait.

      (3) If the child receives both a dominant and a recessive gene for a trait, the child will show the dominant characteristic for that trait. (However, the recessive gene will be carried in the child's cells and may reappear in a future generation.)

d. The combination of inherited traits which make up a child is the result of chance.

A study of meiosis might be appropriate here. This would explain how each sex cell contains 23 rather than 46 chromosomes.

Instructional Aids

Films:

1. _Human Heredity_, Brown Trust Foundation. Available from C.I.C. Film Library.
2. _The Thread of Life_, Illinois Bell Telephone Co.

References

For Teachers:

1. Bonner, David M., and Mills. _Heredity_. New York: Prentice Hall, 1964.

For Students:

1. American Medical Association. _The Miracle of Life_. The Association, 1966.
2. Brandwein, Paul F., and others. _Life, Its Forms and Changes_. New York: Harcourt, Brace & World, 1967.
3. Brandwein, Paul F., and others. _The World of Living Things_. New York: Harcourt, Brace & World, 1964.
4. Goldstein, Philip. _Genetics Is Easy_. New York: Lantern Press, 1961.
5. Lerner, Marguerite. _Who Do You Think You Are?_ New York: Prentice-Hall, 1963.
6. Navarra, John, and others. _Life and the Molecule_. New York: Harper Row, 1966.

UNIT THREE

THE FAMILY AND THE INDIVIDUAL

Introduction

The family, which serves to perpetuate life, is the basic unit of society. Through family living, the individual learns to get along with many personality types, and acquires the distinctive ways of behaving which define his personality. The individual's personality is further shaped by his social class and his culture.

The family and the individual are affected by, and in turn affect, social, economic, cultural, ethnic, religious, and academic forces in the environment. These factors interrelate with one another either to foster or disrupt family harmony.

The purpose of this unit is to help students gain an understanding of themselves and others, to understand and learn to accept responsibility, to explore the relationships that exist in families, and to understand and discuss problems in "peer relationships."

This unit consists of three lessons. The authors recommend that the lessons be introduced and emphasized (E), then reviewed (R), according to this table:

		GRADES			
LESSON	TITLE	5	6	7	8
One	Role of Family and Individual		E		R
Two	Personality		E		R
Three	The Sex Drive: Attitudes and Behavior			E	R

Vocabulary

adjustments
attitudes
behavior
capacities
characteristics
cooperation
courteous
environment
ethnic
experiences
growth
heredity
individuality
personality
respect
responsibility
self
manners
understanding
emotional
distinct
obedience
financial
patience
standards

LESSON ONE

ROLE OF FAMILY AND INDIVIDUAL

Concept: Some influences on the modern family arise from within the family unit itself; some from outside the family unit.

Content

A. The social influences on the family and the individual are numerous.

1. Families start with a man and a woman who become husband and wife.
    a. If there are children, husband and wife become mother and father, or parents.
    b. Because of death or divorce, some families have only one parent, who must try to do all the things that both parents do in other families.
    c. In other instances, a relative or foster parents take care of children.
2. The family forms the core of the individual's social life.
    a. Beginning life as a member of a family, the individual eventually moves to form his own family. (Exceptions recognized.)
    b. We tend to take family relationships for granted.
        (1) Members of one's family are also people who have individual personalities.
        (2) Young people often think that all of the attention of the family should be focused on them.
    c. Families help set standards for children.
        (1) Values are first acquired within the family.
        (2) Standards established early in life by the family are likely to be retained.
    d. Respect for individuals in the family helps build self-respect.
        (1) Good manners should begin at home.
        (2) Home should be a place where one can relax and feel at ease.

e. Families should respect and be interested in each other's possessions, interests and friends.

   (1) Families may not always agree, but each person should be willing to hear the other and give help if possible.

   (2) Parents have a responsibility to help their children select their friends.

f. Families are happiest and most successful when they participate in activities for the whole family and recognize the individuality of each member.

   (1) They may worship together.

   (2) They may share in community affairs as a family.

   (3) They cultivate family friends.

   (4) They work and play together.

   (5) They respect the individuality of each member.

g. Being a family requires teamwork.

   (1) No member of a family is more important than the others.

   (2) Everyone has importance, and individuality must be maintained.

   (3) No one enjoys a family whose members are always quarreling or complaining.

h. A spirit of cooperation gives each family member a feeling of pride and confidence in himself and his "team." This contributes greatly to a person's mental health.

i. One of the most important factors in family living is loyalty.

   (1) If one is loyal to his family he will make every effort to keep it a happy family.

   (2) He will avoid quarrels and bickering.

   (3) He will not shrink from his family responsibilities.

3. Family privileges and responsibilities: The highest level of civilization is achieved when individuals and groups assume responsibility.

   a. People have many similar characteristics but, as we have learned, no two people are alike.

   b. People are different and have a right to be so.

      (1) Mature individualism implies recognition of one's responsibilities.

c. Parents have special responsibilities to children.

(1) They show love by sharing, patience, affection, and good humor.

(2) They give material security and care through providing food, clothing, shelter, and allowances.

(3) They provide guidance: they teach values and proper behavior and help the child find personal satisfaction in life.

(4) They protect the child from hazards existing in every day living, and from unhealthy habits and disease.

4. The child eventually learns to act as a responsible individual apart from his family, and as a member of the school community.

a. The mature student respects the goals and objectives of the group and helps with tasks that are necessary for the common good of his community. In order to be able to stand alone, and be accepted by friends, one must be able to bear the responsibility of living and working with others.

b. As a student, the child learns more about his world and his fellow man.

c. He learns that the future is based on the present.

5. The family must be a responsible economic unit.

a. The family must not only earn income, but preserve and build assets through saving.

b. The family must accept limitations, and budget for contingencies.

(1) The family must be realistic about its social position and what it can afford to spend.

(2) Education and medical needs are typical budgetary items.

B. The family structure is culturally and ethnically determined.

1. The "typical" family in the United States consists of a father, a mother, and children.

2. Other kinds of families exist in our culture.

a. Some have only one parent.

b. Some contain persons of several generations living within the same household.

c. Some children have stepparents or foster parents.

d. Some families are childless.

3. Family life may differ in other countries.

   a. The commune shapes family life in parts of China and Russia.

   b. The tribe shapes family life in the African bush country.

4. Why did the family, as such, develop?

   a. Need for cooperation to survive and protect offspring.

   b. Cultural and religious customs were influential.

5. Family life in the United States has developed and changed over the years as a result of historical, religious and economic factors. Diversity in cultural and ethnic background has resulted in today's cultural differences.

(Instructional Aids and References for teachers and students are listed at the end of this unit.)

LESSON TWO

PERSONALITY

Concept: Personality is the total impression a person makes upon other people. It is inclusive of his basic qualities and characteristics, habits, attitudes and mental and emotional response.

Content

A. Personality is expressed by behavior.

1. We can tell much about any person if we observe his behavior: how he speaks, how he reacts to people, his attitudes about people and about himself, etc. Therefore, we can describe that person as being energetic, happy, quiet, withdrawn, aggressive, or considerate, according to what we observe of his behavior.

2. People evaluate us according to what they observe of our behavior.

B. The disposition for certain personality traits is determined genetically.

1. It is believed that mental capacity is generally determined by heredity.

2. The role of learning is so significant that genetic potentials cannot be realized unless environment is favorable. For example, what would happen to a genius without schools, books, and guidance?

Note to the teacher: Learning takes place formally and informally, consciously and unconsciously. The child does not only learn at school, he learns the attitudes, beliefs, and mode of response from people around him.

C. Starting with birth, the individual starts to learn. Gradually he acquires the habits, attitudes, and personality traits from his parents and family first, and later from other people who influence him.

1. Psychologists believe that childhood experiences are most significant in shaping personality.

2. Significant experiences during adulthood are also influential in personality development.

3. Society has established male and female roles that help shape personality of boys and girls according to cultural norms.

D. Personality is dynamic. As a person interacts with people and situations, his personality affects and is affected by every experience.

E. During adolescence, the peer group becomes very important.

1. Teen-agers develop traits accepted or admired by the peer group.

2. The peer group fulfills the need to "belong" to a group.

3. It provides opportunities to learn social graces in heterosexual settings.

4. It influences the values, attitudes and behavior of the adolescent.

F. Personality can be improved. Awareness of one's desirable and undesirable qualities can lead to improvement.

1. Positive qualities should be stressed.

2. Negative qualities should be changed.

(Instructional Aids and References for teachers and students are listed at the end of this unit.)

LESSON THREE

THE SEX DRIVE: ATTITUDES AND BEHAVIOR

Concept: The designed purpose of the sex drive is to assure the perpetuation of the species through mating and reproduction. It is also related to pleasure, a desire to belong, and a feeling of acceptance. The development of healthy attitudes toward sex and a responsible and socially acceptable code of conduct are of great importance to the welfare of the adolescent.

Content

A. Development of a stable and desirable attitude toward human sexuality and reproduction is important.

1. This is one of the basic drives of man.

2. It is the method of perpetuation of the human race.

3. It is a significant part of every individual's personality.

4. In order to understand the meaning of sexuality, it is important to:

   a. Learn to use proper terms in describing sex organs and their functions.

   b. Take part in intelligent conversation.

   c. Keep informed by reading reliable publications.

5. Understanding the scope of sexuality will lead to a healthy point of view.

   a. Human sexuality combines mental, social, and physical factors.

   b. Many lifelong pleasures of marriage and family life depend upon a healthy development of sexuality.

   c. A healthy attitude about one's sexuality is conveyed through mature understanding and interest rather than embarrassment and guilt or shame.

   d. A proper attitude will enhance a more balanced and satisfactory life in the future.

   e. Sexual interest and urges are normal. Through study and discussion with knowledgeable individuals, one may identify and understand his sexual drive, and learn how to direct his energies toward worthwhile goals.

B. Development of responsible social and moral standards.

1. Respect and appreciation for the opposite sex is the basis of wholesome relationships.

    a. Boys and girls should view each other as good companions worthy of respect, and with whom one may have much joy through socially acceptable activities.

    b. While physical attraction may be a part of relationships between boys and girls, common interests and goals, and mutual understanding should be the basis of dating.

    c. Boys and girls expect each other to:

        (1) use proper language

        (2) dress appropriately

        (3) observe good manners and dating rules.

2. Behavior should be governed by responsible moral values. Values are a product of learning from many sources, but the desire to abide by them comes from within the individual.

    a. Learning self-control is a valuable asset.

        (1) You are responsible for your own actions.

        (2) You have a long life ahead.

    b. Stay clear of potentially risky situations.

        (1) Avoid unchaperoned parties of all kinds.

        (2) Avoid or minimize "parking."

        (3) Do not accept invitations to go to a boy or girl friend's house when parents are not home.

        (4) Have parents or yourself set a curfew.

        (5) Avoid too much "aloneness" - double-date.

    c. There are consequences for everything we do. Irresponsible sexual behavior probably leads to harmful effects:

        (1) Feelings of guilt and shame.

        (2) A reputation of being promiscuous or cheap.

        (3) Pregnancy and forced marriage which would have little chance of being successful.

        (4) Loss of self-respect, and damage to one's relationships with others.

Instructional Aids

Filmstrips:

1. Learning to Live Together, Parts I and II (8 filmstrips), Society for Visual Education.
2. Family Relationships, (4 filmstrips), Society for Visual Education.
3. Developing Basic Values, (4 filmstrips), Society for Visual Education.
4. Guidance Discussion Series, The Jam Handy Organization: Your Feelings, Making Friends, Your Family and You. Available from C.I.C. Film Library.

Films:

1. Parents Are People Too, McGraw-Hill.
2. Improve Your Personality, Coronet Films.
3. Making a Decision, McGraw-Hill.

References

For Teachers:

1. Ojemann, R. H., Hughes, J. E., and Chowning, K. A Teaching Program in Human Behavior and Mental Health, Book 6. Cleveland, Ohio: Educational Research Council of America, 1968.
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3. Units III and VI of Part III of this publication.

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2. American Medical Association. A Story About You. The Association, 1968.
3. American Medical Association. Facts Aren't Enough. The Association, 1968.
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5. Henry, William E. Exploring Your Personality. Chicago, Illinois: Science Research Associates, Inc., 1952.
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7. Jenkin, Gladys G., and Neuman, Joy. How to Live With Parents. Chicago, Illinois: Science Research Associates, Inc., 1948.

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14. Weitzman, Ellis. Growing Up Socially. Chicago, Illinois: Science Research Associates, Inc., 1949.

UNIT FOUR

NUTRITION

Introduction

The rate of growth of school children reflects a number of factors. Of major importance are increased knowledge of principles of good nutrition, the availability of a wide variety of foods, and a rise in the standard of living.

This unit consists of two lessons designed for grades five and seven. At the seventh grade level, the lessons may be presented again with more emphasis and detail.

Vocabulary

nutrients
amino acids
protein
carbohydrates
fats
vitamins
minerals
calorie
algae
ration-dense
freeze-drying
incaparina
torula

LESSON ONE

DEVELOPING A SENSIBLE FOOD PLAN

Concept: Food selection and eating patterns are determined by social, psychological, and physiological needs. Since choice of foods determines nutritional balance and this affects health, each student should understand the role food plays and should develop a sensible food plan for himself.

Content

A. Food selection and eating patterns are determined by many factors.

1. National or regional or ethnic background often affects people's eating habits.

    a. A national background may dictate food favorites: e.g., Germany - sauerkraut; England - Yorkshire pudding; Mexico - tortillas, etc.

    b. A regional background may also determine favorites: e.g., northeastern states - baked beans; southern states - hush puppies and hominy, etc.

    c. One's social group affects these patterns also.

        (1) An adult at work has coffee breaks.

        (2) The young person meets friends for snacks after school or in the evening.

        (3) Certain foods are consumed largely by upperclass Americans: e.g., gourmet foods.

    d. The desire for social acceptance affects all ages.

        (1) "In" foods are often chosen regardless of their effect upon the individual.

        (2) Fashion endorses the slim figure.

            (a) Many persons deprive themselves of proper nutrition to be slender.

            (b) Some persons skip entire meals for this.

2. Learning causes people to like or dislike certain foods.

    a. A parent's comment may establish a young person's habits: e.g., "I've never eaten liver in my life," so neither will Johnny

    b. The "demonstration effect" where people learn to like new foods after being told about them.

3. The physical relationship between man and his food is of the utmost importance.

   a. Survival and good health depend on food.

   b. Good eating habits need to be established and maintained throughout life.

      (1) A proper attitude toward eating is essential.

         (a) A good appetite helps food digestion.

         (b) A poor appetite may be due to illness, insufficient exercise or rest, snacking at the wrong time, or lack of vitamin B-1.

      (2) A regular routine aids the body.

         (a) Most people eat three meals a day with snacks.

            1. Breakfast should include one-third of the day's calorie needs.

            2. Snacks should add nutrients to the diet, not just calories, and should be included in the total daily calorie count.

         (b) Recent studies suggest that six smaller meals, properly spaced, might be better for total nutrition.

            Proper mastication aids the bodily processes.

            1. Well-chewed foods aid in digestion.

               a. Food is broken down and mixed with saliva.
               b. Food "gulped down" may never be digested. This causes loss of nutrients. It may also cause indigestion and irritability.

            2. Foods should not be "washed down."

               a. This hinders digestion.
               b. Quantities of air may be swallowed in this way.

   c. Food properly chosen in early life affects health in the years to come.

      (1) Proper habits begun early tend to maintain nutritional balance.

      (2) Proper food maintains good muscle tone and body structure.

      (3) Proper food is helpful in disease prevention: e.g., anemia, goiter, etc.

(4) Proper food aids in the prevention of obesity.

- (a) This condition results from a glandular imbalance (5% of obesity) or overeating.
- (b) There are dangers in obesity.
  - 1. Blood pressure may rise.
  - 2. Heart strain may occur.
  - 3. Obesity carries threats of glandular upset, kidney disease, arthritis, and gall bladder disease.
  - 4. Resistance to infection may be lowered.
- (c) Obesity should be combated.
  - 1. Prevention is preferable to treatment.
  - 2. A physician's advice and a physical examination should be obtained.
  - 3. "Crash diets" are dangerous.
    - a. These are often deficient in nutrients, vitamins, and minerals.
    - b. The weight loss is seldom maintained after the diet ends.
  - 4. Exercise to maintain muscle tone should accompany any prescribed diet.

(5) Proper diet can help those who are underweight.

- (a) The young person who grows rapidly may become underweight.
- (b) This condition is sometimes harder to overcome than obesity.
  - 1. If the cause is other than sudden growth, it must be sought out and corrected medically.
  - 2. Usually a high protein, high carbohydrate diet will aid in maintaining body weight during rapid growth.
  - 3. The body must receive more nutrients during periods of rapid growth than it requires for regular maintenance.

B. The foods that make up the diet can be classified according to type and function.

1. Today we recognize the basic four groups.

   a. Dairy foods rich in protein, calcium, vitamins A and D, and fats.

   b. Meat groups which provide protein, phosphorous, iron, fats, and the B complex vitamin.

   c. Vegetable and fruit groups which contribute vitamins A, C, B and minerals.

   d. Breads and cereal groups rich in carbohydrates and B vitamins.

2. The basic four groups contain certain substances necessary to health. These substances, known as nutrients, are usually classified into five, or possibly six, groups.

   a. Proteins contain the body's building blocks, amino acids.

      (1) They supply food for new cells and tissue as the body grows.

      (2) They supply raw materials to repair and/or replace worn out body cells.

      (3) Proteins provide the daily supply of nitrogen.

      (4) They also supply needed phosphorous, sulphur, and iron.

      (5) They are found basically in meats and fish.

         (a) Other animal foods such as eggs, milk and cheese also supply protein.

         (b) Dried beans, peas, and peanuts are a lesser source of this nutrient.

   b. Carbohydrates are our chief energy foods.

      (1) They contain three chemical elements - carbon, hydrogen, and oxygen - needed by the body.

      (2) Sugar is the best known type of carbohydrate.

         (a) This is especially concentrated in cane sugar, beet sugar, molasses, syrup and honey, and foodstuffs containing large quantities of these.

         (b) Some ripe fruits and milk contain lesser amounts of sugar.

(3) Starch is another well-known carbohydrate.

(a) It is present in large quantities in flour products such as bread, cake, pastry, cookies and doughnuts.

(b) Lesser amounts are found in potatoes and some other vegetables - corn and rice.

(4) Cellulose is a third type of carbohydrate, found mainly in plant structure.

c. Fats are often grouped with carbohydrates and energy foods, but may be considered separately as high energy fuels.

(1) They contain the same chamical elements as carbohydrates.

(2) They are more concentrated than carbohydrates..

(3) They are digested more slowly than carbohydrates.

(4) Fats should not make up more than 20% of the diet.

(a) Americans tend to eat too much fat.

(b) High amounts of fats may lead to coronary heart disease.

(c) Once stored in the body, fats are utilized only after carbohydrates have been metabolized.

(5) Fatty foods may be supplied by both plant and animal foods.

(a) Peanuts, soybeans, and oils from corn and olives are plant foods rich in fats.

(b) Cream, butter, lard, bacon, and cod liver oil are fats found in animal foods.

d. Vitamins are essential for good health.

(1) They are the chemical regulators of the body.

(a) They are like catalysts that speed up the reactions of the body.

(b) They make it possible for the body to use the other nutrients.

(2) Each vitamin helps in the prevention of a particular disease.

(3) Vitamins are easily destroyed by high temperature or long cooking.

e. Certain minerals are needed for proper body growth and functioning.

(1) These serve a three-fold purpose.

(a) They are essential for the formation of bones and teeth.

(b) They are essential for the growth of body cells, especially red corpuscles.

(c) They provide the essential ingredients in various body fluids.

VITAMINS

Vitamin	Good Food Sources	Function in the Body
A	Milk, butter, cheese, margarine, cream, eggs, cod liver oil, liver, yellow fruits and vegetables like bananas, cantaloupes, apricots, peaches, carrots, squash and pumpkins.	Helps keep skin smooth and soft. Protects against eye infections. Strengthens resistance to colds.
B (nicotinic acid)	Meat, dairy products, eggs, beans, peas, vegetables and milk.	Prevents pellagra. Prevents certain skin diseases.
B_1 (thiamine)	Meats (especially pork), fish and poultry, whole cereals, egg yolks, bread.	Stimulates appetite and keeps digestion normal. Promotes growth. Keeps nervous system healthy. Helps prevent irritability.
B_2 (riboflavin)	Meats, dairy products, eggs, vegetables.	Helps cells use oxygen. Promotes clear vision. Promotes smooth skin.
B_{12}	Meats (especially liver), dairy products, eggs.	Prevents and cures anemia. Necessary for normal growth.
C (ascorbic acid)	Citrus fruits, green vegetables, fruit juices.	Maintains healthy body tissues. Resists infection. Promotes healing.
D (sunshine vitamin)	Vitamin D milk, butter, fish-liver oil, salmon, egg yolk. Sunshine (not a food).	Builds strong bones and teeth. Helps body absorb calcium.

Vitamin	Good Food Sources	Function in the Body
E	Lettuce, whole wheat, milk, meat, eggs.	Protects red blood cells Aids in childbirth.
K	Liver, cabbage, spinach, celery, tomatoes.	Necessary for coagulation of blood.

(2) The body needs more than a dozen minerals in varying amounts that should be provided by a good diet:

(a) Calcium and phosphorous are necessary for the formation of teeth and bones, the clotting of blood, and the regulation of the heartbeat.

(b) Iron is essential for the formation of the hemoglobin in the blood which carries oxygen from the lungs to the cells.

(c) A trace of copper is necessary for the utilization of iron in the body.

(d) Iodine is essential for the production of thyroxine by the thyroid gland (located in the neck), which is an important regulator of growth.

(e) Sodium and potassium are essential for the regulation of water balance in body tissues (getting food to the body cells and wastes from them).

(f) Magnesium is important for building strong bones and teeth.

(g) Other elements necessary in lesser amounts are manganese, fluorine, cobalt, and zinc.

f. Water is often listed as the sixth nutrient because it transports all the others throughout the body.

(1) Although not a food, we could live only a few days without it.

(2) Over two-thirds of our body is water.

(3) The adult body loses about three quarts of water each day.

(a) This amount must be replaced with fluid intake each day.

(b) The amount required depends upon weather and activity.

(4) Beverages other than water may help supply the necessary fluids.

(a) Fruit juices also supply vitamins and minerals.

(b) Soda fountain drinks may supply extra calories.

(c) Colas and other carbonated drinks should be limited.

(d) Milk provides proteins as well as water. (In order to find out how much water milk contains, add vinegar, one teaspoon at a time, until milk solids settle. Pour off watery fluid and measure.)

The following table shows the nutrients obtained from various foods:

FOOD NUTRIENT SOURCES

Food Group	Protein	Carbo-hydrates	Calcium (phosphorous)	Iron	Vit. A	Vit. B	Vit. C	Vit. E	Vit. K
Milk, ice cream, cheese	xx	x	xx		x	x		x	
Meat, fish, poultry, eggs	xx			xx	x	xx		x	x
Peas, nuts, and beans	xx	x		x		xx			
Vegetables, and fruits. Green and yellow, citrus fruits, and tomatoes		x	x	x	xx	x	xx	x	x
Bread and cereals, whole grain and enriched	x	xx		xx		xx		x	

x - fair source
xx - good source

C. Necessary food intake, measured by the calorie, is determined by several factors.

1. The calorie is a basic unit of food measure.

a. This measure indicates the amount of usable energy available in different foods.

b. A calorie is the amount of heat energy necessary to raise the temperature of one pound of water 4° Fahrenheit. (Expressed metrically: the amount of heat energy required to raise the temperature of one kilogram of water 1° centigrade.)

2. Many factors determine the number of calories a person needs each day.

a. Basic metabolism is one such factor.

(1) This is the rate at which the body oxidizes the energy-producing foods it ingests.

(2) This rate varies from person to person.

b. The types of activities engaged in greatly affect the caloric need.

(1) The student who "cannot sit still" burns more calories than the one whose nose never leaves a book.

(2) Cutting the grass requires more calories than needlework.

c. Age is also an important factor.

(1) Teen-agers require more calories than do any other age groups.

(a) This age group is generally more active than any other group.

(b) This is the period of life when the greatest growth takes place and the body needs more body-building foods.

(2) A mature person requires fewer calories to maintain weight and energy.

d. Sex also is an important consideration in the amount of food a body needs.

(1) Girls normally have smaller body frames than boys.

(a) They grow faster in early teens and stop growing sooner than boys.

(b) Their smaller frames require fewer cells to build.

(2) Boys usually engage in more frequent and more vigorous physical activity than girls.

(Instructional Aids and References for teachers and students are listed at the end of this unit.)

LESSON TWO

NEWEST FINDINGS IN NUTRITION

Concept: Knowledge of the newest findings in nutrition prepares the student for new products.

Content

A. Increasing world population has created nutritional problems.

1. New foods are being developed.

   a. High-protein algae, called chlorella, is being grown, flavored and shaped to resemble traditional foods.

   b. Fish flour (a concentrate of ground up, deodorized fish not suitable for market) is used to supplement low-protein diets.

   c. A modern yeast, torula, can be grown on wood pulp.

      (1) This has high food value.

      (2) It can be produced in great quantities very cheaply.

      (3) When dried, it tastes like roasted chestnuts.

   d. An additional source of protein has recently been developed from petroleum.

2. Organizations which work for nutritional improvement on a world-wide scale include the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF).

B. New scientific and technological advances have created new methods of processing and preserving food.

1. Increasingly more foods are being processed and preserved for marketing purposes.

   a. People have more foods to choose from.

   b. Most foods are available at all times of the year.

   c. New foods and new recipes are being developed.

   d. These changes require that families be well-informed in order to maintain a balanced diet.

Instructional Aids

Films:

1. Food That Builds Good Health, Coronet Films.
2. Your Food, McGraw-Hill Films.
3. Food For Health, Sterling Educational Films.

References

For Teachers:

1. Otto, James J., Julian, C. J., and Tether, J. E. Modern Health. New York: Holt, Rinehart & Winston, Inc., 1963, pp. 304-324.
2. Wallace, McCullan. Building Your Home Life. New York: Lippincott, 1966.

For Students:

1. Hammond, W. Plants, Food, and People. New York: Coward, McCann, Inc., 1964, Chapters 1, 10, 16.
2. Reidman, Sarah H. Food For People. New York: Abelard-Schuman, 1961.
3. Pamphlets from: National Dairy Council, The Milk Foundation, The Kellogg Company.

UNIT FIVE

EXERCISE, POSTURE AND REST

Introduction

It is important that young people establish healthful habits for daily living. Getting enough exercise, practicing good posture, and obtaining sufficient rest and sleep are essential health habits.

The two lessons in this unit are designed for use at the seventh grade level.

Vocabulary

exercise
calisthenics
fitness
muscle tone
fatigue

LESSON ONE

EXERCISE AND GOOD POSTURE

Concept: Exercise and good posture are essential for the proper growth, maintenance, and appearance of the body.

Content

A. Exercise is the vigorous and repeated contraction of body muscles for the sake of developing and maintaining physical fitness.

1. We usually consider exercise as activity engaged in beyond our normal day-to-day movements.

2. Exercise is accomplished by walking or running, engaging in sports such as tennis, basketball and swimming, or by performing calisthenics.

3. The result of exercise is a speeding up of many physiological processes in the body (circulation, breathing, excretion, etc.) thus developing or increasing the efficiency of systems responsible for the processes.

a. Exercise stimulates the circulatory system.

(1) The muscular contraction during exercise results in a greater requirement for nourishment (oxygen and glucose) to the muscle cells, and therefore a greater circulation of blood.

(2) Heart action increases in order to satisfy the demand for greater blood circulation. This results in a stronger heart muscle.

(3) Since the volume of blood circulation is increased, and because of other factors, more capillaries are brought into use. This increases the efficiency of the circulatory system.

b. Exercise develops the respiratory system.

(1) The greater demand for oxygen results in deeper and more frequent breathing.

(2) The breathing muscles are more fully developed.

(3) More lung space is utilized, and more alveoli are in active use.

c. Exercise develops the muscular system and improves its function in connection with the nervous system.

(1) The muscular contraction produces large amounts of waste products (carbon dioxide, urea, etc.) which must be removed from the muscles.

(2) Repeated contraction of a muscle greatly increases its strength and endurance.

        (3) The tone of a muscle is improved by exercise.

        (4) Coordination among the various muscles and between the muscles and appropriate nerve cells is improved. This results in increased physical skills.

    4. Exercise improves one's appearance and sense of well-being.

    5. Exercise during childhood and adolescence is especially important.

        a. Normal physical growth during this period enhances physical health and appearance throughout life.

        b. Many physical deficiencies can be corrected if treated early.

        c. The general "body type" is established in childhood and is modified during the teen years. It is very difficult to change one's physical appearance after age twenty.

B. Good posture is important for proper body development and appearance.

    1. If posture is poor, muscles which support the body will become fatigued and some joints are likely to become strained and irritated.

    2. Good posture presents a good appearance; poor posture will tend to make one unattractive.

    3. Very poor posture may affect the development or placement of internal organs resulting in health problems later in life.

    4. Proper balance is the basis of good posture.

        a. By trying to stand as tall as possible, one can achieve a properly balanced vertical posture.

        b. When sitting, one should move all the way toward the back of the chair in order to receive its full support; the torso should be kept in a vertical position.

(Instructional Aids and References for teachers and students are provided at the end of this unit.)

LESSON TWO

REST AND SLEEP

Concept: Rest and sleep are necessary for total body fitness. Thus, one should provide optimum physical conditions and schedule his activities intelligently.

Content

A. All persons require sleep, but needs vary.

1. Most people spend one-third of their lives sleeping and resting.

2. Individual needs differ.

    a. Most elementary and junior high school students require from 8 to 11 hours of sleep.

    b. People who are active normally need more sleep than others.

    c. Persons recovering from illness need more sleep and additional rest periods.

B. During sleep body functions are slowed, but total rest never occurs.

1. The heartbeat slows to prevent strain on the heart.

2. The lungs also relax during sleep as we breathe only 6-8 times per minute as compared with 16 times per minute when awake.

3. Contraction of muscles is minimized, so is glandular activity.

4. The body continues to require energy; only during sleep can the cells of the central nervous system restore their energy for the next day's work.

5. Rest is necessary for all tissues and organs to rebuild protoplasm and get rid of waste products that build up during body action.

6. Many bodily processes continue to function while we sleep.

    a. We average 35 changes in body position each night.

    b. We respond to outside stimuli: e.g., noises, lights, pressure.

C. Fatigue, which has many causes, has adverse effects.

1. The causes of fatigue vary.

    a. Too vigorous physical activity may result in a person being tired for several days.

b. Lack of enough exercise to keep up muscle tone may result in general fatigue.

c. A person who is overweight may feel generally fatigued.

d. A diet lacking the essentials may cause fatigue.

e. Some diseases cause fatigue: e.g., diabetes, sinus infections, anemia, decayed teeth, viruses, etc.

2. Emotional instability, accidents, and diseases may result from fatigue.

a. The most striking effects of fatigue are upon emotional stability.

(1) One may be nervous and become upset over matters of little importance.

(2) One may become short-tempered.

(3) One may burst into tears.

(4) One may indulge in self-pity.

(5) Specialists tend to agree that some behavior problems in children arise from fatigue.

b. Fatigue can cause accidents in the home, at work, at play, or on the highway.

c. There is reason to believe that fatigue makes it possible for some diseases to get started in the body.

D. Since sleep is vital the best possible conditions for it should be maintained.

1. A regular time for going to bed should be maintained which the body can come to accept.

2. A pattern of relaxing should be followed.

3. A firm mattress will lend proper bodily support.

4. Comfortable body coverings should be chosen.

5. A pleasant room temperature (with or without fresh air) should be established.

a. Most people prefer a certain amount of fresh air.

b. Some people with respiratory ailments or allergies, etc., cannot enjoy fresh air.

E. Each person must learn how much he can undertake and allow time in his schedule for adequate rest and sleep, depending on his physical needs.

1. The desire to be popular often leads a person to attempt more than he can endure physically.

   a. He doesn't want to say no when asked for fear he won't be asked again.

   b. He doesn't want to admit he cannot do what is asked of him for fear of ridicule.

   c. He often takes on more and more tasks to be a "good guy."

2. A young person often does not realize the limits of his endurance and does not know when to stop.

   a. Each person must learn to recognize his body's warning signals and take time to rest.

   b. He must learn to evaluate what is of prime importance to him and what must take second place.

Instructional Aids

Charts:

Students can make wall charts on several types of exercise, and on good posture.

Films:

1. *Why Physical Education*, Coronet Films.
2. *Vigor* (for boys) and *Vim* (for girls), Sterling Educational Films.
3. *Your Sleep and Rest*, Encyclopedia Britannica Films, Inc.

References

For Teachers:

1. Kimber, Diana Clifford and others. *Textbook of Anatomy and Physiology.* New York: The Macmillan Co., 1961.
2. Otto, James H., Julian, C. J., and Tether, J. E. *Modern Health.* New York: Holt, Rinehart and Winston, Inc., 1963, pp. 264-301.

For Students:

1. Bendicle, L. *Pushups and Pinups.* New York: McGraw-Hill Book Company, Inc., 1963, Chapters 7-9.

References - For Students (cont'd)

2. Clark, Marguerite. Why So Tired? The Ways of Fatigue and the Ways of Energy. New York: Hastings House, 1961.

3. Walsh, John. The First Book of Physical Fitness. New York: Franklin Watts, 1961.

UNIT SIX

TOTAL BODY GROOMING

Introduction

Good grooming is a health concern as well as a social matter of taste and refinement. To keep one's body clean and fresh is as important as selecting appropriate clothes and presenting an attractive appearance.

This unit is composed of one lesson designed for sixth grade students.

Meaningful activities provide for a variety of insights that are life-centered rather than book-centered. These should result in changed perceptions, new and broader understandings, useful attitudes, and improved behavior.

Vocabulary

allergy
impetigo
eczema
pustule
acne

deodorants
antiperspirants
pimples
blackheads

LESSON ONE

ATTITUDES AND APPEARANCE

Concept: There is much that every individual can do to improve his appearance to achieve a higher level of satisfaction. Good taste in selecting one's clothes and cleanliness of the whole body are essential factors in presenting an attractive and healthy attitude about one's self.

Content

A. The first impression one makes is largely based upon his appearance.

1. Healthy skin is important to good appearance.

   a. Except for the exposed surface, the skin is alive and active and will respond to good care.

   b. Many complexion problems are more than skin deep.

      (1) The skin reflects the general state of health; thus, improvement must include the general health condition of the individual.

      (2) A sallow, unhealthy color may be due to need for rest, lack of exercise, or improper diet.

   c. Daily bathing is necessary to remove dead cells and the oils and salts which accumulate on the skin.

   d. Cosmetics should be chosen carefully and used with good taste.

      (1) Those who use cosmetics should start with a clean face and emphasize the natural.

      (2) Care should be taken to choose products that do not intensify a skin problem.

      (3) Cosmetics and accessories should not be borrowed.

   e. Deodorants and antiperspirants may be used to counteract body odors.

   f. Perfumes should be used sparingly.

2. The adolescent is often faced with skin problems, such as blackheads, pimples, and acne, due to the speeding up of glands regulating growth and maturation.

   a. Blackheads, caused by enlargement of pores clogged by oil and dirt, are best treated by frequent and thorough washing.

b. Pimples are minor infections which can be avoided through meticulous cleanliness.

c. Acne is a more general infection of the oil glands and hair follicles.

  (1) It causes embarrassment at a time in life when the individual is most self-conscious.

  (2) Acne may cause emotional upsets which can in turn lead to more acne.

  (3) Treatment can alleviate symptoms.

    (a) Do not squeeze the pustules.

    (b) Wash the affected regions several times daily with rich suds.

    (c) Alcohol may be applied after washing.

    (d) A well-balanced diet is essential.

      1. Avoid foods that are rich in fats.

      2. Check individual foods such as chocolate, shrimp, etc.

    (e) Get plenty of exercise and rest.

    (f) If skin texture allows, spend time in the sun.

    (g) See the doctor if acne persists.

3. Unpleasant breath may be caused by poor dental hygiene or by diet.

4. Good posture is an asset which enhances the overall appearance: the fit of clothes, poise, etc.

a. Walking posture is improved by good habits.

  (1) Walk from the hips without swinging them.

  (2) Hold shoulders erect, easy, and relaxed.

  (3) Keep toes pointed straight ahead.

  (4) Wear well-fitting shoes.

b. Sitting posture is improved by good habits.

  (1) Push hips to the back of the chair.

  (2) Keep shoulders erect but relaxed.

  (3) Sit with legs together and feet on the floor.

c. Standing posture is improved by good habits.

(1) Stand erect - not slumped.

(2) Keep stomach and buttocks tucked in.

(3) Hold shoulders erect but relaxed.

d. Poor posture not only detracts from appearance but may cause tiredness and backache.

5. Clothing is more than just a body covering.

a. Color should enhance, not detract or obliterate.

b. Texture should flatter and add to style of garment.

c. Style of garment should be appropriate to the occasion and to the age and characteristics of the person.

B. There is a tendency, especially among young people, to pattern themselves after someone else.

1. This may be a copied hair style, manner of speaking, or dress fashions.

2. This is natural, but it is far better to make the most of one's personal assets.

3. The process of expressing one's individuality should not be carried too far.

4. Society has set certain standards of acceptance and good taste.

a. Few people admire the "rugged individualist" who disregards social standards in demanding his rights to appear and act as he pleases.

b. The successful person is aware of the opinions of others and makes the most of his individual qualities.

UNIT SEVEN

COMMON DISEASES

Introduction

Each disease has its own causes, symptoms, and cure. While a program like this is not concerned with treatment, prevention and control are among its objectives. This unit presents a brief description of some of the causes of disease and provides information on prevention and control to protect the health of the individual and his community.

The following table is presented to help teachers determine when to introduce and emphasize each of the three lessons of this unit:

		GRADES			
LESSON	TITLE	5	6	7	8
One	Health and Disease	X		E	
Two	Communicable Diseases	X		E	
Three	Non-Communicable Diseases	X		E	

Vocabulary

fungi
chlorophyll
pathogenic
cocci
bacilli
spirilla
jungle rot
amoeba
paramecium
parasite
larvae
communicable
tetanus
lesuin
contaminated
pasteurization
mucous
trachea
immunity
antitoxins
agglutinin
disinfectant
antiseptic
epidemics
hygiene
infection
streptococcus
diagnosis
penicillin
isolation
fumigation
gamma globulin
vaccine
chancre
reagin
convulsions
isotope
pancreas
insulin
bacteria
host
chronic

LESSON ONE

HEALTH AND DISEASE

Concept: Health is a state of well-being that may be disturbed by disease caused by organic malfunction or by dominance of disease agents.

Content

A. The body normally resists disease agents (germs) if favorable health conditions are prevalent.

  1. Immunity.

  2. Good nutrition, and rest.

  3. A relatively healthy environment.

B. There are numerous kinds of organisms that cause disease.

  1. Many diseases are caused by bacteria.

    a. They are the smallest member of a very large class of plants called fungi.

    b. Bacteria contain no chlorophyll.

    c. They must live in or on a living thing.

    d. Disease-producing bacteria are called pathogenic bacteria.

    e. There are three basic types of bacteria.

      (1) Cocci or round-shaped bacteria, which cause such diseases as scarlet fever, sore throat, and pneumonia.

      (2) Bacilli or rod-shaped bacteria, which cause such diseases as tuberculosis, diptheria, typhoid fever, whooping cough and tetanus.

      (3) Spirilla or spiral-shaped bacteria, which cause such diseases as cholera or syphilis.

    f. Where are bacteria found?

      (1) Most everywhere in water and air.

      (2) In the soil and bodies of most plants and animals.

      (3) Fortunately most of the bacteria are not harmful.

g. What are the conditions necessary for bacterial growth?

(1) They need food, warmth, moisture, and darkness.

(2) Most species survive best at 98° F. or normal body temperature.

(3) The human body provides all the necessary conditions for bacteria that inflict disease on it.

(4) Under favorable conditions they multiply at an enormous rate.

2. Fungi cause a few diseases in man.

a. There are several kinds of fungi.

(1) Yeasts and molds make up one group.

(2) Mushrooms and toadstools make up another group.

b. Mold will cause disease.

(1) The two most common diseases produced by growth of mold on skin tissue are ringworm and athlete's foot.

(2) Another disease of this kind not found locally, but usually in southern and tropical areas, is jungle rot.

3. Protozoa can cause certain diseases.

a. Protozoa are tiny one-celled animals.

b. There are many kinds of protozoa.

(1) Most protozoa are not harmful to man.

(2) The amoeba and paramecium are the best known varieties.

(3) One specie of amoeba causes the disease amoebic dysentery.

c. They carry on many life functions.

(1) They move about, can eat and digest food.

(2) They can reproduce very rapidly.

d. The three best known diseases that protozoa cause are malaria, sleeping sickness, and amoebic dysentery.

e. How do they get into man?

(1) Most generally by a bite from an insect.

(2) The mosquitoes and flies are the worst pests.

        - (3) They sometimes get into the body from eating improperly prepared food.
        - (4) They find their way into the digestive tract.

4. Viruses are the cause of many diseases.
    - a. They have been discovered and identified only recently.
        - (1) They are extremely small.
        - (2) The electron microscope has enabled scientists to see them.
    - b. Viruses have unique characteristics.
        - (1) They are known to have the simplest structure of all living things.
        - (2) They can grow only on living tissue; they cannot be cultured.
        - (3) Unlike bacteria which destroy cells of the body, viruses convert the cell material into more virus particles.
        - (4) They multiply and change extremely fast.
    - c. Among the diseases in humans which are caused by viruses are: smallpox, chicken pox, measles, mumps, yellow fever, poliomyelitis, rabies, influenza and the common cold.
5. The rickettsia make up a small group of disease-causing organisms.
    - a. They resemble bacteria in appearance.
    - b. Like viruses they can grow only in living cells.
    - c. They are tiny rod-shaped organisms which swim in the blood.
    - d. These organisms are carried by lice, ticks, fleas, and mites.
    - e. The best known diseases caused by these organisms are typhus fever and Rocky Mountain spotted fever.
6. Parasitic worms cause diseases in man.
    - a. The tapeworm is the best known of these parasites.
        - (1) An adult tapeworm has a flat, ribbon-like body and is grayish white in color.
        - (2) Its knob-shaped head is equipped with suckers and a ring of hooks.
        - (3) Tapeworms may grow to a length of 30 feet.

        - (4) They generally get into the body from the flesh of hogs, cattle, or fish.
        - (5) They grow in the digestive tract and rob the person of needed nourishment.
    - b. The hookworm is a serious health menace in the southern states and in tropical areas.
        - (1) Larvae develop in the soil.
        - (2) They enter the body by boring through the skin or through a cut or break in the skin, generally in the feet and toes.
        - (3) They finally pass from the blood stream to the digestive tract.
        - (4) They grow in the human intestine by sucking blood from the intestinal wall.
    - c. The trichina is one of the most dangerous of the parasitic worms.
        - (1) In its first stage it is found in the muscle of a hog.
        - (2) Man gets the trichina into his body by eating improperly cooked pork.
        - (3) The trichina leave the intestine and enter the blood stream causing a painful disease called trichinosis.

C. Disease organisms are spread in several ways.

- 1. Infection is spread by direct contact.
    - a. Can be spread by touching an infected person.
    - b. Infection can be spread by kissing.
    - c. Infection can be spread by sexual contact.
- 2. Infection is spread by indirect contact.
    - a. By handling contaminated clothing.
    - b. By handling contaminated objects such as dishes, drinking cups and doorknobs.
- 3. Infectious organisms are spread in the air.
    - a. Most respiratory infections are spread this way.
    - b. These organisms get into the air by sneezing, coughing, spitting, or even talking.

4. Water often carries infectious organisms.
   a. Polluted rivers, lakes, streams, or wells are often the cause of typhoid fever.
   b. Faulty septic tanks and sewage systems can be a big problem.
5. Organisms may be spread by food, especially when it is not processed properly.
   a. Several kinds of food poisoning are the result of organisms entering the body by this method.
   b. Improperly refrigerated food may spoil.
   c. Stored food may become rotten.
   d. Improperly canned food may cause disease.
   e. Eating and drinking utensils must be kept clean.
   f. Organisms may come from contaminated food growing areas.
   g. Pasteurization has eliminated most organisms spread by contaminated milk.
6. Many animals may be the carriers of infectious organisms.
   a. Insects, particularly mosquitoes and flies, carry germs.
   b. Small rodents such as rats and mice are often carriers.
   c. Several kinds of worms are carriers.
   d. Many mammals and fowls may be carriers of parasites like ticks, lice and mites which are in turn carriers of infectious organisms.
7. Unsanitary conditions spread diseases.
   a. Garbage, rubbish and trash help spread organisms.
   b. Droppings from all kinds of animals and humans can spread disease.

D. The body has or may acquire several lines of defense against disease organisms.
   1. The skin mucous membrane and certain secretions are a first line of defense.
      a. The skin covering the body is an effective barrier against most micro-organisms.
         (1) Keeping the skin clean so bacteria won't lodge in openings of hair follicles or oil glands helps control bacteria.

        (2) Keeping the skin free of cuts, scratches, or punctures aids in keeping bacteria out.

    b. The mucous membrane lining the body openings traps many bacteria.

        (1) A sticky substance, mucous, prevents many organisms from entering the body cavity.

        (2) The trachea and nasal passages are covered with hair-like growths called cilia which help.

    c. There are other body secretions which help destroy micro-organisms.

        (1) Tears in the eye wash away bacteria.

        (2) Saliva is strong enough to kill some organisms.

        (3) Gastric juices in the stomach destroy many organisms.

2. The body's second line of defense are the white corpuscles.

    a. These white blood cells are in the blood stream.

    b. They attack and destroy foreign organisms when they enter the body.

    c. The pus around the point of infection is actually dead white blood cells filled with destroyed organisms.

3. Antibodies are the body's third line of defense.

    a. These are chemical substances produced in the blood when a specific organism enters the body.

    b. There are several different kinds of antibodies; antitoxins and agglutinins are only two.

4. Immunity to a disease may be natural.

    a. Babies are born with natural immunity for 6 to 12 months.

    b. Humans have natural immunity to most animal diseases.

    c. Active immunity may be acquired naturally.

        (1) By having an attack of the disease which gives the patient immunity for life.

        (2) The infection is sometimes so mild the patient is not aware of it.

5. Vaccination is a form of medically acquired immunity.
    a. A vaccine is a fluid which contains weakened or killed virus or bacteria.
        (1) The vaccine is put into the body by a process called vaccination.
        (2) This vaccine stimulates the body to produce antibodies for protection against a specific disease.
    b. Vaccination has long been an effective method of immunization.
        (1) Edward Senner in 1796 used a vaccine derived from cowpox to immunize people from smallpox.
        (2) Vaccines today protect people from many diseases.
        (3) One of the most recent was Dr. Salk's vaccine against the dreaded polio infection.

E. Other means for the prevention and control of disease are also of vital importance.

1. Killing or controlling micro-organisms is done in several ways.
    a. The ultraviolet rays of sunlight are most effective in killing bacteria.
    b. Heat is very effective.
        (1) Boiling will kill most organisms.
        (2) Dry sterilizing heat is most effective.
        (3) Pasteurization kills all bacteria except those in the spore stage.
    c. Disinfectants kill bacteria on contact.
        (1) Care should be used because some will kill human tissue also.
        (2) Some of the more common disinfectants are lysol, iodine, alcohol and carbolic acid.
    d. Antiseptics are substances such as boric acid and dilute iodine that merely prevent the growth of bacteria by keeping them from their food supply.
    e. Penicillin and sulfa drugs are comparatively new methods of disease-controlling micro-organisms.
        (1) Penicillin was discovered by Dr. Alexander Fleming, a British scientist, in 1928.

        (2) Penicillin is effective against all three types of bacteria.
        (3) Penicillin should be used only upon qualified medical advice.
            (a) Some people are allergic to it.
            (b) Overuse may cause some people to become immune to it.
        (4) Sulfa drugs have been particularly effective against wound and blood stream infections.

2. Cleanliness is of major importance in the control of disease.
    a. A clean environment is important.
    b. Clean food and water is a necessity.
    c. Personal cleanliness is a requirement.
3. Insect control is of major importance in control of diseases throughout the world.
4. Highly infectious diseases can be controlled through isolation and strict sanitation.
    a. The infected person may be isolated from other people.
        (1) This can be done in the home.
        (2) An isolation ward in a hospital may be used.
    b. All clothing and eating utensils must be disinfected carefully.
    c. All discharges and wastes from the body must be disposed of properly.

(Instructional Aids and References for teachers and students are listed at the end of this unit.)

LESSON TWO

COMMUNICABLE DISEASES

Concept: Communicable diseases are those caused by particular species of infectious agents.

Content

A. Most communicable diseases are usually contracted during childhood.

  1. Chicken pox is commonplace.

    a. Seventy percent of all people have had chicken pox by age fifteen.

    b. It is an acute disease which is associated with slight fever.

    c. The skin eruptions it causes are similar to those of smallpox.

    d. It is transmitted from one person to another by direct contact or by contaminated articles.

    e. It is a virus disease, usually not serious, which lasts about a week.

  2. Measles is generally of three basic types.

    a. Red measles (rubeola) is the most common.

      (1) A highly contagious virus disease characterized by high fever.

      (2) Red spots appear in about four days.

        (a) They appear over most of the body.

        (b) They appear even inside the mouth.

      (3) Ninety percent of the people contract measles by the time they are twenty years old.

      (4) Eyes should be protected to prevent complications.

      (5) Gamma globulin shots are used today.

        (a) They are used to make the disease less severe.

        (b) They are not used for immunization.

(6) There is now a vaccine for immunity.

(a) Recommended for all children as part of infant immunization procedure.

(b) As of March, 1968, all children enrolled in Illinois public schools must submit proof of immunization or evidence of having had the disease.

b. German measles (rubella) is sometimes called the three-day measles.

(1) This is a less serious type than the red measles.

(2) There is a slight fever with swollen glands accompanied with a rash.

(3) Can cause severe damage to an embryo or fetus if contacted by a pregnant woman.

(4) Is not considered harmful after third month of pregnancy.

c. Roseola is a third type of measles.

(1) It is accompanied by a rose-colored rash in the form of red spots on the skin.

(2) One form of roseola is contagious.

(3) Another form of roseola, found in infants and accompanied by a high fever, is non-infectious.

3. Mumps is another common childhood disease.

a. Mumps is a virus infection characterized by fever and swelling of glands.

b. Mumps is more serious for persons past puberty; the reproductive glands, the ovaries and the testicles may be affected.

c. Mumps is generally spread by direct contact or contaminated articles.

d. Bed rest is required for about 10 days.

e. A vaccine for immunity has been developed and is recommended for all children who have not had the disease.

4. Whooping cough is a disease of young children.

a. It is an acute bacterial disease involving the trachea and bronchi.

b. It is characterized by a typical cough lasting from one to two months.

c. It is dangerous only when children under two contact it.

d. There is a vaccine for active immunity. Illinois law requires proof of disease or immunity for school children.

B. Infectious respiratory diseases are common.

1. The common cold is the most prevalent among respiratory diseases.

a. It is responsible for more time lost from school and work than any other disease.

b. The virus is spread by sneezing and coughing or by contact with persons having a cold.

c. There is no known means of immunization for the disease.

(1) General good health will help prevent the organisms from getting started.

(2) Sound hygiene practices will also aid in prevention.

(3) Proper rest and avoidance of chilling are effective means of prevention.

2. Influenza (flu) is similar to a severe cold.

a. It is highly communicable and characterized by fever with chills, aches, and pains.

b. Influenza is a serious disease because of the complications that may follow, especially pneumonia.

c. There are two types of viruses.

(1) The common types are called A and B.

(2) "Asian flu", or type C, has been identified recently.

d. Flue epidemics are not uncommon.

e. Since there is no known method of immunization for this disease, good health practices are important in prevention.

f. Flu shots do help some people.

(1) They are not a preventive vaccine.

(2) They merely aid the body in building up resistance to germs.

3. Pneumonia is a serious infection of the lungs.

a. Lobar pneumonia is caused by bacteria.

(1) The bacteria grow on the tissue of the lungs.

(2) The air sacs then fill with fluids.

(3) Respiration becomes extremely difficult and death may result.

(4) Penicillin is very effective in killing penumonia bacteria.

(a) Death rate has decreased steadily.

(b) There are now 20% fewer deaths than there were 15 years ago.

b. Virus pneumonia is much less serious than the bacterial type.

c. There is no effective immunity for either kind of pneumonia.

(1) Good personal health habits are a good practice in prevention.

(2) Sufficient rest and sleep are helpful.

4. Tuberculosis is still a leading cause of death among bacterial infections.

a. The bacteria attack and destroy lung tissue.

b. Early detection is necessary.

(1) The tuberculin test is sometimes used.

(2) The chest x-ray gives more detailed information.

(3) Tuberculosis can be cured.

(a) Modern drugs help in treatment.

(b) Complete rest, sometimes in a sanitarium, is necessary.

(4) There is no immunization available at present.

(5) The best preventive measures are good health habits and good nutrition.

C. Non-infectious respiratory diseases can be controlled.

1. Immunization is effective in controlling some diseases.

a. Salk vaccine is permanently effective in preventing polio in 90% of the recipients.

b. Some vaccines are effective only for a few years. Included in this group are smallpox, diphtheria, typhoid fever, and yellow fever.

  (1) Booster shots are needed to continue immunity.

2. No methods of immunization are known for several diseases.

  a. Impetigo is an infection of the skin.

    (1) It is highly contagious but not dangerous.

    (2) Application of antibiotics can clear it up in a short time.

  b. Malaria is caused by a parasitic protozoa.

    (1) The parasite is carried by the female anopheles mosquito.

      (a) Malaria can be caused only by the bite of this mosquito.

      (b) Control of the mosquito means control of the disease.

    (2) The disease causes high fever, and is a leading cause of death in some areas of the world.

  c. Rheumatic fever is an infection caused by bacteria.

    (1) It is characterized by fever and red, swollen, and painful joints.

    (2) Antibiotics are used in treatment.

    (3) The grave danger of this disease is damage to the heart.

  d. Scarlet fever is a bacterial infection.

    (1) The symptoms include severe sore throat, high fever, chills, nausea and bright scarlet rash.

    (2) Antibiotics or sulfa drugs will usually result in complete recovery.

  e. Hepatitis is an infection of the liver caused by a virus.

    (1) It is usually spread by contaminated water, food, or milk.

    (2) Diet and rest seem to be the best method of treatment.

    (3) Gamma globulin may act as a short-term deterrent.

  f. Venereal diseases (V.D.) are a growing health problem.

    (1) There is no known immunity, natural or medical, for these diseases.

(2) Venereal diseases are spread by sexual intercourse.

- (a) They are not contracted from toilet seats, drinking fountains, or other objects.
- (b) They are spread by people who carry the disease and pass it on to a new sexual partner.

(3) The number of victims to these diseases has been increasing since 1952.

(4) The most prevalent venereal diseases are syphilis and gonorrhea.

- (a) Syphilis is a dangerous disease caused by a spiral-shaped micro-organism.
  - 1. Its symptoms appear in stages.
    - a. A small sore or blister called a "chancre" appears on fingers, lips, or sex organs.
    - b. This blister may not cause pain, and usually disappears without treatment; but the germs remain in the body.
    - c. In three to six weeks a rash like hives will appear which may cover the body or be limited to the hands and feet.
    - d. Sore throat, fever, or headaches may develop.
    - e. In the latent stage outward signs disappear, but the disease will be strong inside the body. If not treated, it will attack the heart, the brain and spinal cord.
  - 2. Syphilis can be diagnosed.
    - a. The Darkfield microscope test is used.
    - b. The Wassermann test (a blood test) was developed in 1905.
    - c. The spinal fluid test is used in the later stages of syphilis.
  - 3. Syphilis can be cured through the use of penicillin, but damaged nerve or grain tissue cannot be restored to adequacy.

4. Syphilis can affect the fetus.

    a. A father cannot pass the disease on to his child directly, but the mother can give the disease to the baby before it is born.

    b. The child may be born weak, deformed, blind, deaf, paralyzed, or even dead.

5. Control over the spread of disease has been aided by laws in many states, including Illinois, requiring blood tests before marriage to determine whether either of the couple has a venereal disease.

(b) Gonorrhea is another type of venereal disease caused by bacteria that are similar to organisms causing meningitis.

1. Gonorrhea is usually confined to the reproductive organs.

    a. It starts its destructive work from 3-7 days after exposure.

    b. One of the hazards is that it may cause sterility in both men and women.

2. There is a difference in the symptoms of the disease between men and women.

    a. Men infected with the disease discharge a white liquid from the penis.

    b. The disease is more difficult to diagnose in women since they may have it for a long time without ever knowing it.

3. Treatment is relatively simple. Upon appearance of the first symptoms the patient must seek treatment through a licensed physician or a recognized medical institution. Delay may bring serious results.

(Instructional Aids and References for teachers and students are listed at the end of this unit.)

LESSON THREE

NON-COMMUNICABLE DISEASES

Concept: While medical discoveries have minimized the threats of communicable diseases, cancer, heart disease, and other non-communicable diseases are major health concerns today.

Content

A. Cancer.

1. Cancer is second only to heart disease as a cause of death in the United States.
   - a. One of every six deaths is caused by cancer.
   - b. Cancer claimed 300,000 lives in 1966.
   - c. Lung cancer is on the rise. Smoking is considered a major cause.
2. Twenty-five percent of all Americans living today will eventually have cancer.
   - a. According to present rates, only one in three cancer victims will survive.
3. The causes of cancer are still not known, but scientists have established information on conditions or substances that may lead to cancer.
   - a. Tar in tobacco is a proven factor.
   - b. Some chemicals, dyes and oils are other factors.
   - c. Prolonged exposure to x-ray and other radiation may induce cancer.
4. Heredity does not seem to be a significant factor.
5. Cancer is identified as a particular kind of cell.
   - a. Cancer cells grow abnormally fast.
   - b. They destroy normal cells.
   - c. If left unchecked they eventually spread to other parts of the body.
6. There are several types of cancer.
   - a. There are different kinds in different parts of the body.
   - b. They grow at different rates and respond differently to treatment.

7. Sex and age are factors in susceptibility to cancer.

    a. More men than women die of cancer; the ratio is 55:45.

    b. Threats of cancer increase with age.

    c. Breast cancer is the leading cause of death among women.

    d. Lung, skin, and digestive system cancers are the leading cause of death among men.

8. Early diagnosis of cancer is the key to its control. There are seven signs that may be symptoms of cancer:

    a. Any sore that does not heal.

    b. A lump or thickening in the breast or elsewhere.

    c. Unusual bleeding or discharge.

    d. Change in a wart or mole.

    e. Persistent hoarseness or cough.

    f. Persistent indigestion or difficulty in swallowing.

    g. Persistent change in bowel or bladder habits.

9. An annual medical checkup is important. There are several tests for cancer.

    a. One simple test is known as biopsy. It is a simple microscopic examination of tissue to determine presence of cancer.

    b. Another test is the microscopic examination of cells in certain body fluids.

10. Treatment of cancer varies according to its type.

    a. No method is certain.

    b. Two ways have proved the most effective.

        (1) Cancerous cells are removed by surgery.

        (2) Some types of ray treatment have been effective.

            (a) Bombarding with x-rays has worked on some.

            (b) Radium treatment with gamma rays is used.

            (c) A radioactive isotope of iodine has been used successfully.

            (d) Radioactive isotopes of phosphorous have worked on leukemia.

(3) Above all, successful treatment must begin early.

B. Diabetes is a disease caused by the failure of the pancreas to secrete the insulin necessary to digest sugar.

1. Certain factors are associated with susceptibility to diabetes.

a. It is more common in middle age or older than in the young.

b. Diabetes is known to be hereditary but the trait is recessive.

c. It is common in both males and females.

d. It more commonly occurs in people who are overweight.

2. Symptoms are well known.

a. Sugar accumulating in the blood causes excess thirst.

b. Frequent urination is usual.

c. Loss of weight and strength is a good indication.

d. There are some reliable tests:

(1) The urine will contain sugar.

(2) The blood will show excessive sugar content.

3. Treatment is vital to life.

a. There is no known cure; once the body stops secreting insulin it never starts again.

b. The body must be supplied with insulin every day by hypodermic injection or pill.

c. Weight control is essential.

C. Food poisoning may affect anyone.

1. Staphylococcus poisoning is the most common type.

a. It is caused by a bacterium commonly found on the skin.

(1) Generally caused by someone handling the food.

(2) May be spread by someone coughing or sneezing on the food during the preparation.

b. Persons generally become ill from 1-6 hours after eating the food.

c. Most cases are not serious and seldom cause death.

2. Botulism is the most dangerous form of food poisoning.

a. It is caused by a bacillus, the spores of which grow in the soil.

b. Most cases are traced to home-canned food.

(1) Spores get into jars of vegetables from soil contamination.

(2) When these spores are eaten they are tasteless, but once in the body they release a powerful toxin.

(3) They cause almost certain death.

3. The third type of food poisoning is called salmonella.

a. This bacteria may get into food from droppings of rats, mice or other animals.

b. This type of poisoning is not common.

c. Outbreaks of salmonella are generally traced to foods from animal sources, such as eggs, meat pies, and poultry.

d. Thorough cooking of these products will prevent the disease.

4. Most food poisoning can be prevented.

a. Proper food handling is essential.

b. Proper storage is important.

c. Thorough cooking is a safeguard.

d. Cleanliness must be consistently practiced.

D. Diseases of the heart, vessels, and blood are the major cause of death in the United States.

1. Such diseases occur from a variety of causes.

a. Heart disease caused by infection may stem from such diseases as diphtheria, German measles, virus pneumonia, tuberculosis, mononucleosis, syphilis, and rheumatic fever.

b. Some heart ailments are present at birth.

(1) About 30,000 to 40,000 children are born with heart defects in the United States each year.

(2) Defective valves and defective heart linings are examples of congenital heart conditions.

2. Diseases of the heart, vascular system and blood are of many types.
   a. Coronary heart disease is a narrowing of the arteries reducing the blood supply to the heart muscle.
      (1) The heart can still function under ordinary conditions.
      (2) Excitement or physical exertion may cause pain and/or shortness of breath.
   b. A coronary occlusion is a block in a coronary artery.
      (1) The portion of the heart supplied by the blocked artery dies.
      (2) This results in the familiar "heart attack" which strikes suddenly.
   c. Phlebitis is a condition caused by inflammation of the veins.
      (1) Soreness will develop along the vein.
      (2) Swelling of the limb and fever may be involved.
      (3) If the limb is kept quiet until the clot has firmly attached to the vein, there is little danger.
      (4) The condition will gradually clear up.
   d. Varicose veins are caused by weakened valves in the veins.
      (1) They can be seen as bulging bluish cords standing out under the skin.
      (2) Circulation in the limbs is poor.
      (3) Varicose veins may result from an occupation requiring standing for long periods of time.
      (4) This condition may also be caused by excessive overweight.
   e. One of the leading causes of death today is arteriosclerosis, or "hardening of the arteries."
      (1) The muscle coat hardens with deposits of calcium.
      (2) Blood supply to the artery wall is reduced.
      (3) The artery may become partially closed increasing the blood pressure.
      (4) Increased blood pressure means additional pressure on the heart.
      (5) This condition may be caused by excessive amounts of cholesterol in the blood.

f. Anemia is the most common blood ailment.

(1) This condition results from a lack of red blood cells or sufficient hemoglobin in the cells.

(2) In all kinds of anemia the body tissues suffer from a lack of oxygen.

(3) In pernicious anemia, the red-cell-forming centers of the bone marrow are not functioning properly.

(4) In iron-deficiency anemia, red cells are sufficient but they are small and lack normal hemoglobin content.

g. Hemophilia is an inherited blood condition.

(1) The blood fails to clot or clots very slowly.

(2) This condition may be caused by a defect in one of the plasma proteins.

(3) Hemophilia rarely occurs in women but is transmitted from mother to son.

h. Leukemia is one of the deadliest diseases.

(1) Leukemia is a cancerous disease of the bone marrow.

(2) White corpuscles are produced at a rapid pace, crowding out red corpuscles.

(3) There is no known cure for leukemia at present, but doctors believe that a cure is not far off.

Instructional Aids

Films:

1. Body Fights Bacteria, McGraw-Hill.
2. How Disease Travels, Walt Disney Productions.
3. How Our Bodies Fight Disease, Encyclopedia Britannica Films, Inc.
4. Immunization, Encyclopedia Britannica Films, Inc.
5. Infectious Diseases and Man-Made Defenses, Coronet.
6. Infectious Diseases and Natural Body Defenses, Coronet.
7. White Blood Cells: Defense Against Disease, McGraw-Hill.

References

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1. American Medical Association. Today's Health Guide. Chicago: The Association, 1965.

2. Curtis, Lindsay R. V.D. America's Growing Threat. Dallas, Texas: Tane Press, 1965.

For Students:

1. Bauer, W. W., Jenkins, G.G., Shacter, H.S., and Pounds, E.T. Health For All. Glenview, Illinois: Scott, Foresman & Co., 1965, Books 5-8.

2. Otto, James. Modern Health. New York: Holt, Rinehart & Winston, 1963.

3. Wilson, Charles C., and Wilson, Elizabeth A. Health, Fitness and Safety. Indianapolis, 1961.

Teachers are urged to obtain pamphlets and other publications from the following sources:

1. American Cancer Society, (228 N. Genesee), Waukegan, Illinois.
2. Illinois Department of Public Health, Division of Preventative Medicine, Springfield, Illinois.
3. U. S. Department of Health, Education and Welfare, Washington, D. C.

UNIT EIGHT

MENTAL HEALTH AND BEHAVIOR

Introduction

Adolescence is a stage of development that is characterized by rapid growth and intense emotions. As children approach puberty and enter this special world of excitement and growth, they become concerned about their emotional and physical status. They also enter new relationships that demand good judgment and intelligence without which they may not be able to cope with the intense emotional pressures of this period.

This unit is composed of four lessons. Teachers may use the following table in determining the grade levels during which each lesson may be introduced and emphasized:

		GRADES			
LESSON	TITLE	5	6	7	8
One	Basic Human Needs	-	X	E	E
Two	Human Emotions	-	X	E	E
Three	Adjustment	-	-	X	E
Four	Maturation, Values and Behavior	-	X	E	E

Vocabulary

adjustment
anxiety
compensation
conflict
defense mechanism
frustration
mental illness
neurosis
psychosis
rationalization
sublimation
suppression

LESSON ONE

BASIC HUMAN NEEDS

Concept: Behavior of any individual is directed toward achieving certain goals that he may be seeking consciously or unconsciously. Part of our behavior is directed toward fulfilling basic physical and psychological needs.

Content

A. Fulfillment of basic physical needs is necessary to maintain life. Complete failure in satisfying such needs results in death, while partial satisfaction may impair health.

  1. Need for air, food, and liquid.

  2. Need for proper temperature.

  3. Need for elimination of body wastes.

B. Sexual needs are considered by some to be basic although continual deprivation from sexual expression is not likely to endanger life.

C. Psychological needs are great forces that motivate human behavior. If unsatisfied, happiness and well-being of the individual may be disturbed, but this does not cause life to cease. However, an individual's mental health does affect his body, rather significantly in severe cases of deprivation.

  1. Need for love.

    a. Love is a bond between two or more people which is based on affection, concern, and emotional acceptance of loved ones.

    b. Many psychologists believe that love is essential for normal development of children.

    c. There are various types of love: love for certain objects and possessions, love for pets, love for arts, love for mankind, and love for one's parents or one's spouse. The highest and purest form of love is directed toward other human beings.

  2. Need for security.

    a. Security stems from acceptance and love by others. Lack of security, or insecurity, is caused by fear, uncertainty, and rejection by parents and peers.

    b. Insecurity causes anxiety which results in psychological discomfort and often affects the behavior of the individual.

3. Need for recognition of one's status by others.

    a. Recognition of achievement.

    b. Recognition of membership in a group.

    (How do students gain recognition from teachers, parents, and peers?)

4. Need for independence.

    a. Independence means that an individual is capable of performing a task and willing to accept responsibility for what he does.

    b. As the child grows older, he strives for greater independence.

    c. Before one is ready to assume greater responsibilities he must be prepared to cope with smaller ones in a satisfactory way.

D. Frustration results when needs are not fulfilled.

1. Frustration may act as motivation to achieve one's goals.

2. If the level of frustration is very high, the individual may be discouraged, or he may suffer from extreme anxiety.

(How does a frustrated child act? How does a frustrated adult act?)

E. Living in organized society dictates that we observe rules and laws as we seek satisfaction of our needs. A mature individual is one whose behavior is directed toward meeting needs and expectations of others as well as his own. Self-centered activities may bring satisfaction of certain needs, but public service brings recognition and esteem.

(Instructional Aids and References are provided at the end of this unit.)

LESSON TWO

HUMAN EMOTIONS

Concept: Emotions are feelings or sensations that can motivate our behavior. They are expressed in either general or specific forms and are associated with pleasantness or unpleasantness. Often physiological changes occur within the individual as he experiences intense emotions.

Content

A. Basic emotions.

1. According to Watson (1919) human beings are capable of expressing three basic emotions a few weeks after birth.

    a. Fear, which is caused by loud noises or by falling.

    b. Rage, which results from restraint of movement.

    c. Love, which is a response to petting.

2. According to contemporary psychologists, infants are capable of a general state of emotional excitation. Emotions become more specific as the child grows older.

3. There are many emotions that adolescents and adults experience. Some of these are love, fear, anger, distress, grief, remorse, shame, jealousy, wonder, and elation.

B. Expression of emotions.

1. We learn how to express our emotions from our parents and close associates, and from the general culture in which we grow.

    a. In our culture people express joy by smiling or embracing each other, while they express grief by remaining quiet or even weeping.

    b. Males and females follow different patterns in the way they express their emotions. These patterns are established by our culture.

        (1) Males are taught to be "strong" and aggressive, therefore they do not shed tears when sad, but they may become physically aggressive when angry.

        (2) Females are taught to be sensitive and tender which causes them to abstain from aggressive behavior and encourages them to reveal emotional distress.

2. We express our emotions through language, gestures, and facial expression. All are learned from our cultural background.

3. As we become more mature we learn to control our emotions better.

    a. Young children are easily aroused emotionally, and they respond without much thinking.

    b. Mature people may experience strong emotions but they express them in a mild form.

C. Emotional response is accompanied by physiological changes in the body.

1. When emotions are mild, physiological changes are minimal.

2. During extreme emotional excitation many physical and chemical changes take place in the body.

    a. Extreme fear and anger cause the heart to beat harder to pump more blood, and also stimulate certain glands to secrete chemicals that help the body to defend itself by attack or escape, or fight or flight behavior.

    b. During sexual excitement certain physiological changes take place to prepare the body for sexual intercourse.

3. Sophisticated devices are used by researchers, physicians, and police departments to measure physiological changes in the body that are attributed to emotional excitation. The "lie detector" is one example of such devices.

D. Understanding emotions expressed by other people helps us understand our own emotions.

1. Understanding what causes people to act emotionally and observing how they express their emotions help us evaluate our own feelings.

2. Understanding how others feel helps us deal with them more effectively.

(Instructional Aids and References are provided at the end of this unit.)

LESSON THREE

ADJUSTMENT

Concept: Adjustment is the process by which an individual adapts himself to meet his needs in various situations. Since life always brings new situations, the process of adjustment is a continuous one.

Content

A. Adjustment may be physical or psychological.

1. Physical adjustment is the change that takes place in the body to enable it to cope with the environment.

    a. Ratio of sugar and other chemicals in the blood is constant, but in situations requiring physical strength, the ratio of sugar goes up.

    b. Regardless of liquid intake, the ratio of water in the blood remains unchanged.

    c. The body maintains a constant temperature regardless of environmental conditions. The body has certain mechanisms to keep its temperature constant. When cold the body shivers to generate heat and when hot sweat glands are activated to act as air conditioning.

2. When mechanisms of adjustment fail to operate, the body becomes sick. If treatment is not available, the organism dies.

3. As the body adjusts to physical environmental conditions, the mind adjusts to the environment psychologically.

    a. The main dynamic force in this type of adjustment is the need to protect one's ego, or self-esteem.

    b. When an individual's ego is threatened, he tends to protect it by either withdrawing from the situation or by becoming aggressive and attacking the source of the annoyance.

        (1) Daydreaming is a form of adjustment by which an individual leaves the world of reality temporarily to a pleasant world of imagination. This way he escapes from the hardships of reality for a short period.

        (2) Verbal or physical aggression directed at the source of discomfort or at a substitute is an example of adjustment people employ in protecting their self-esteem.

B. Common defense mechanisms.

1. Most people use defense mechanisms unconsciously.

2. The following defense mechanisms are employed by most people; therefore, their use is normal as long as it remains moderate.

   a. Compensation. This term refers to one's devotion to a certain goal with increased vigor in an attempt to make up for some feeling of real or imagined inadequacy. For example, a student who is poor in athletics may excel in academic activities.

   b. Denial. A person may avoid a painful situation by denying unconsciously that it exists. A parent may refuse to believe that his child has some undesirable traits in spite of sufficient evidence.

   c. Displacement. This is a process through which we direct our emotions toward objects or people other than the ones that caused them. A child may be frustrated at his inability to play a game well, so he kicks a stone or attacks one of his friends.

   d. Fantasy. Daydreaming or imaginative activities provide escape from reality which may be severe or harsh. A certain amount of daydreaming, especially in the earlier years of life, must be regarded not only as normal, but also useful.

   e. Identification. This term refers to a method of improving one's opinion of himself by copying observed behavior of another person. Young children identify with their parents or some other adults. Older children and adults identify with movie stars, famous athletes, or some other outstanding individuals.

   f. Projection. An individual may protect his ego by attributing his undesirable traits to someone else. This is a harmful type of adjustment since it causes injury to the personalities of other people.

   g. Rationalization. A person may justify his undesirable behavior by presenting acceptable but untrue explanations. "Sour grapes" describes a situation where an individual seeks a goal, but upon failure he claims the goal is not worthy of pursuit.

   h. Sublimation. Unacceptable desires may be chaneled unconsciously into activities that have strong social approval. The unacceptable desires are often sexual, but they may be expressed as creative efforts in art, poetry, or athletics.

C. Mental illness is a result of inability to cope with life situations at a conscious and realistic level.

1. There is no distinct line between adequate mental health and mental illness.

a. A person who enjoys good mental health is well adjusted to his social environment from his point of view as well as that of other people.

b. A mentally healthy person finds life generally satisfying and leads a life that brings happiness to himself and to other people.

2. Mental illness has become a serious concern in America.

a. There are approximately 1,800,000 patients in hospitals who suffer from mental illness.

b. Mental hospitals treat additional patients.

c. Doctors believe that many medical cases are associated with psychological disorders.

d. Generally, mental patients are adults, but more children and adolescents are becoming mental patients every year. The average now exceeds 21,000 adolescents and 3,000 children under 15 years of age.

e. Urban dwellers are more likely to develop mental illness than rural residents.

f. Mental patients belong to all socio-economic levels and ethnic groups.

3. There are additional signs of emotional and social disorder in our society.

a. High crime rates; approximately two million serious crimes are committed in the United States each year.

b. There are more than 45,000 drug addicts.

c. Chronic alcoholics exceed five million in number.

d. Suicide rates are high. The present average is 19,000 per year.

D. Anxiety is a basic cause of mental illness.

1. Anxiety is an emotional state marked by helplessness.

a. It is usually associated with a combination of fear and hope.

b. It is a result of conflict.

c. It is severe when the conflict is sharp or when the individual lacks confidence in his ability to cope with problems.

d. Fear of failure or pain causes anxiety.

2. All people experience a certain degree of anxiety.
    a. It is normal to experience anxiety within limits.
    b. When an individual is anxiety-ridden and when he fails to regain control, he is mentally ill.
3. Anxiety is a result of two basic factors.
    a. Childhood experiences.
        (1) Rejection by parents.
        (2) Domination or overprotection by parents.
        (3) Traumatic experiences in childhood.
    b. Threatening life situations.
        (1) Normal and well adjusted people may experience extreme anxiety when they face difficult situations.
        (2) Lack of ability fo find solutions to pressing problems.

(Instructional Aids and References are provided at the end of this unit.)

LESSON FOUR

MATURITY, VALUES, AND BEHAVIOR

Concept: Behavior of any individual is influenced and directed by his values and level of maturity.

Content

A. Meaning of maturity.

1. By observing behavior of others we may be able to evaluate the level of maturity they have reached.

    a. Mature individuals are tolerant of physical or psychological discomfort. They can control their emotions and withstand disappointment or pain without much disturbance. (Compare adults with children.)

    b. Mature individuals are given to less frequent and intense outbursts of emotions.

    c. Mature individuals are capable of checking impulsive or explosive behavior; they are capable of delaying their responses.

    d. Mature individuals are socially-oriented. They are considerate of the needs and feelings of others, and they avoid self-centeredness often seen in immature children.

    e. Mature individuals have a realistic knowledge of their society and its norms and standards. They understand the rules of their group and learn to live in harmony with others.

2. Certain attitudes, skills, and abilities help people achieve mature behavior in our society.

    a. Ability to communicate with others so that one may be able to understand others as well as be understood by them.

    b. Ability to recognize the multiple factors present in almost every situation, and to understand the relative importance of each.

    c. Ability to work with others effectively.

    d. Acceptance of one's self, talents, and limitations.

    e. Acceptance of some dependence on others without losing one's individuality and sense of independence.

    f. Respect for other people and for the society in which one lives, including its rules and laws.

g. A wholesome attitude toward the opposite sex which leads to rich and meaningful relationships.

h. Positive attitudes about the future which is largely a result of the present.

i. Ability to give love as well as to receive it.

j. Acceptance and tolerance of other people's individual traits and views.

B. Values govern and regulate behavior.

1. Values are norms or standards that a person adopts and uses in making decisions or choosing among alternatives.

a. Values are not inherited; they are learned from parents, teachers, church, and other individuals and institutions that may influence a person.

b. There are certain values that are accepted by practically everybody just like there are values that are accepted by only a few individuals.

c. A "value judgment" is a judgment based on individual preference which is not necessarily based on factual information.

2. There are rules and laws that govern society.

a. Often our values are consistent with the rules and laws of our society. For example, we believe in honesty, and our rules and laws attempt to encourage people to be honest.

b. Sometimes our values conflict with the laws of our society. When this happens we attempt to resolve this conflict in a mature and responsible manner.

(1) We may examine our values again to see if they are really worthwhile and meaningful.

(2) We may attempt to influence lawmakers to introduce new laws.

(3) If an individual decides to violate the law which he cannot accept nor change, he has to be willing to accept the consequences of his behavior.

C. We evaluate other people and ourselves on the basis of what we know about them and in light of our own values.

1. Behavior of any person is a mirror of his personality.

a. Beliefs, attitudes, and values are expressed when one talks and acts.

b. Knowledge, abilities, experience, aspirations, fears, hopes, etc., are also conveyed by behavior.

c. Facial expression, language, mannerism, and types of activities an individual engages in present his personality to us.

2. We evaluate people according to their behavior and according to our own values. But sometimes we are not accurate and fair in our evaluation.

a. We may not know enough about a person and yet evaluate him on the basis of one quality or trait.

b. We may judge a person by his appearance without giving ourselves an opportunity to learn about his talents, values, limitations, knowledge, and attitudes.

c. We are prejudiced sometimes.

(1) We may evaluate a person on the basis of color, religion, or body type rather than on the basis of his personality.

(2) In a free society people have different views and values. As we evaluate other people, our values that we use in evaluation should be broad and fair. For example, ability to dance well should not be the basis of evaluating other people because, although ability to dance well is desirable, it is not basic to the health and talents of most individuals.

D. Morality is based on values.

1. We judge our behavior and that of others on the basis of its conformity to basic moral values.

a. Morality is based on virtues and ethics as described in various religions and by great teachers and philosophers.

b. Morality is not the same in all societies; what may be moral in our society may be looked at as immoral in some other cultures.

c. We can differentiate between right and wrong rather easily in most situations.

(1) Laws and regulations are rather clear.

(2) Parents, teachers, clergymen, and other responsible adults continuously teach values.

(3) Development of a personal set of values enables us to exercise judgment on moral issues.

2. Values and the peer group.

    a. During childhood, the child is influenced largely by his parents.

    b. As the child grows up to become an adolescent, he starts to identify with a group of his peers.

    c. He conforms to their values and he may reject his parents' values. Sometimes adolescents conform too much to the demands of their peers.

    d. Intelligent adolescents examine the values of the peer group and accept only those that conform to their own basic values.

E. Morality and behavior.

1. Behavior of an individual is moral as long as it is motivated and controlled by basic values that are universally accepted in our culture.

    a. Values that emphasize honesty and integrity.

    b. Values that emphasize the worth and dignity of every human being.

    c. Values that do not permit exploitation or degradation of one's self or one's fellow man.

2. Our society has developed rules for various types of situations and relationships. Rules for dating are presented here.

    a. The boy asks the girl for a date.

        (1) The boy asks the girl for a date reasonably ahead of time.

        (2) The boy suggests the purpose of the date: what they may do, and with whom they would be.

        (3) The boy is expected to escort the girl from her house and back to it.

        (4) The boy is expected to meet the girl's parents.

        (5) The boy is responsible in observing the girl's curfew.

        (6) Both boys and girls show respect for each other by dressing neatly and appropriately.

        (7) The girl should accept or refuse a date graciously, always giving a simple and clear answer.

        (8) The girl should be friendly in her behavior, but she should avoid pursuing boys by telephone or other means.

(9) Both boys and girls should honor their commitments. In other words, one should not cancel a date in order to accept another date with someone else.

(10) Public display of affection is considered in poor taste.

b. Going steady is a relationship agreed upon by a boy and a girl whereby they limit their dating to each other. It has both advantages and disadvantages, but it is not a good idea for very young people.

c. As the boy and girl become well acquainted and develop strong affection for each other, they often attempt to express their feelings.

(1) Kissing and embracing are acceptable forms of expressing sincere affection.

(2) Petting, which is fondling or handling of intimate parts of the body to obtain sexual stimulation, may have serious consequences.

(a) Heavy petting may lead the couple to sexual intercourse.

(b) Strong stimulation of physical desires usually leads to greater frustration where the couple find themselves irritable and quarrelsome.

(c) Petting often leads the boy to lose respect for the girl.

(d) Making physical contact the center of the dating relationship causes the relationship to be narrow and shallow, thus losing the greater joys of social interaction and growth.

(3) Some young people engage in petting because of certain reasons that are often false.

(a) Some boys and girls believe petting is expected in dating relationships.

(b) Some use petting as a means of exploiting the other partner by arousing the sex drive.

(c) Some girls believe petting to increase their popularity.

(d) Some boys and girls believe petting would improve mutual understanding.

(4) It must be observed that both the boy and the girl are responsible for their dating behavior.

(a) They can avoid being alone for extended periods of time.

(b) Each can remind the other of his or her responsibilities and obligations.

(c) Both can examine the consequences of everything they may do and try to evaluate its outcome.

Instructional Aids

Films:

1. A Very Special Day, United World Films. Available from C.I.C. Film Library.
2. Date Etiquette, Coronet Films.
3. Going Steady? Coronet Films.
4. Love: Pre-Adolescent, Sterling Educational Films.
5. Love: Adolescent, Sterling Educational Films.
6. Responsibility, Sterling Educational Films.

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3. Shaffer, L. F., and Shoben, E. J., Jr. The Psychology of Adjustment. Boston: Houghton Mifflin Co., 1956.
4. Text of Unit Two of Part III of this volume.
5. Text of Unit Five of Part III of this volume.
6. Text of Unit Six of Part III of this volume.
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For Students:

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2. Henry, William E. Exploring Your Personality. Chicago, Illinois: Science Research Associates, Inc., 1952.

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3. Jenkins, Gladys G., and Neuman, Joy. How to Live With Parents. Chicago, Illinois: Science Research Associates, Inc., 1948.

4. Kirkendall, Lester A., and Osborne, Ruth F. Understanding the Other Sex. Chicago, Illinois: Science Research Associates, Inc., 1955.

5. Landis, Paul H. Coming of Age: Problems of Teen-Agers. New York, N.Y.: Public Affairs Pamphlets, 1962.

6. Lerrigo, Marion O., and Cassidy, Michael A. A Doctor Talks to 9 to 12 Year Olds. Chicago, Illinois: Budlong Press Co., 1967.

7. Levinson, Florence, and Kelly, G. Lombard. What Teenagers Want to Know. Chicago, Illinois: Budlong Press Co., 1967.

8. Smith, T. V. Building Your Philosophy of Life. Chicago, Illinois: Science Research Associates, Inc., 1953.

UNIT NINE

TOBACCO, ALCOHOL AND DRUGS

Introduction

Knowledge about the uses and misuses of alcohol, tobacco and drugs enables students to protect themselves against exploitation and injury to their physical and mental health. This unit consists of three lessons which should be introduced at the sixth grade level and reviewed in detail at the eighth grade level.

Vocabulary

abstinence
"acid"
addiction
alcoholism
amphetamine
anesthetic
barbiturates
"berrie"
"bluebirds"
bronchitis
"candy"
carbon monoxide
cirrhosis
"coke"
compulsive
convulsions
"co-pilot"
depressant
distillation
emphysema
fermentation
"goof ball"
"grass"
hallucination
hallucinogen
"horse" or "H"
inhibition
irritation
"LSD"
mainlining
narcotic
nicotine
physiological
"pot"
"snow"
"speed"
stimulant
"STP"
"sugar"
tranquilizer
"trip"
ulcer
"white stuff"
withdrawal

LESSON ONE

TOBACCO

Concept: Tobacco is a serious health hazard, but consumption of tobacco by young people is increasing every year.

Content

A. In spite of the well-known dangerous effects of tobacco, more people smoke more every year.

  1. Approximately one-half the total adult population smokes.

    a. About 60% of the men smoke.

    b. About 40% of the women smoke.

  2. About one-third of the teen-agers smoke.

    a. This includes 40% of the boys and 25% of the girls.

B. Cost of tobacco.

  1. The tobacco industries' total sales are $8 billion a year.

  2. The cost to the individual is approximately $150.00 per year if he smokes one package of cigarettes a day.

C. Smokers justify their smoking habits by a variety of reasons.

  1. Adults give the following reasons:

    a. It is relaxing.

    b. It provides "something" to do, especially with the hands.

    c. It is a habit established in ignorance earlier in life.

    d. Many other people smoke too.

  2. Adolescents give several reasons for smoking. According to a study on smoking among high school students, the students of Newton High School, Newton, Massachusetts, offered the following reasons for smoking:[1]

    a. The reason most often given was a desire to go along with the group.

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[1] Salbar, Eva, M.D. Study of Newton, Massachusetts High School Students, Harvard University.

b. Students say smoking gives them enjoyment and release from tension.

c. Many start smoking out of curiosity. (By itself, curiosity would not lead to very much smoking since the first experience is very unpleasant for most children. Other motives reinforce the early one of curiosity to keep the young smoker trying again until he can tolerate, even enjoy his cigarette.)

d. Many smokers say they wanted to impress others.

e. Many wanted to appear older and more sophisticated.

f. Some smoke to defy the adult world.

D. Advertising promotes cigarette smoking among all age groups.

1. Extensive campaigns are conducted in all media.

2. All types of appeals are made.

a. There is a brand for the thinking man, the outdoor man, the social woman, the college crowd, the day at the beach, or the day in the woods.

b. Advertising implies that cigarettes will make you popular, glamorous, relaxed, socially acceptable, and sexually appealing.

3. Various unsupportable claims are made by advertisers: e.g., king-size cigarettes claim less tar.

a. The reverse is true because you are actually smoking more tobacco.

b. If more smoke goes to the lungs, more tar deposits result.

4. Filter tips of all kinds are assumed to be more healthful.

a. All filters - micronite, recessed, dual, and charcoal - are claimed to be best.

b. Filters remove so little tar and nicotine that reduction of danger is minimal.

5. The tobacco and advertising industries are working to make money.

E. Once started, smoking becomes a habit.

1. Repeated smoking creates a desire to continue smoking.

2. Some people start with only a few cigarettes a day, but become chain smokers.

3. Some people become addicted to smoking. The body adjusts to the habit and requires more nicotine.

F. Tobacco smoke has been analyzed.

1. It contains nicotine--a powerful poison.

   a. Taken in pure form, 70 milligrams (.0025 oz.), would kill the average person.

   b. Cigarettes today contain from .5 to 2.5 milligrams of nicotine per cigarette.

2. Tar makes up about 40% of the tobacco smoke ingredient.

3. A significant amount of carbon monoxide gas is contained in tobacco smoke.

4. There are also small amounts of carbon dioxide, arsenic, hydrogen cyanide, and certain other harmful chemical compounds.

G. Tobacco smoke harms the body.

1. It has many harmful effects on the respiratory system.

   a. The bronchial tubes show irritation and swelling.

   b. A loss of the cilia which help keep air passages clean occurs.

   c. The lungs are one of the greatest sources of trouble.

      (1) Air sacs in lungs become thick and less flexible.

      (2) Air sacs become clogged causing the familiar "smoker's cough."

      (3) Deposits on the air sacs may lead to cancer.

      (4) Unhealthy lungs may lead to more serious diseases such as pneumonia, tuberculosis and emphysema.

2. Smoke affects the membrane lining of the larynx.

   a. It often causes swollen vocal cords.

   b. It causes them to become thicker causing a heavier voice.

3. Smoking affects the heart and blood vessels.

   a. It causes thickening and hardening of the artery walls, placing added strain upon the heart.

   b. Blood pressure is increased as a result.

   c. Less oxygen gets to blood stream because of carbon monoxide.

4. Nicotine in cigarette smoke affects the nervous system.

    a. At first it stimulates the nerve ends which control heart and blood vessels.

    b. The eventual effect of the drug is that of a depressant.

5. Smoking has some effect on the digestive system.

    a. It slows down the normal processes of digestion.

    b. It is often associated with peptic ulcers.

6. Impressive statistics summarize the dangers to health in smoking.

    a. Smokers have almost two times the risk of dying from heart attack as non-smokers.

    b. The association between cigarette smoking and lung cancer is alarming and significant.

        (1) There is a high correlation between the incidence of lung cancer and smoking habits.[2]

            (a) 91.2% were cigarette smokers.

            (b) 4.0% were pipe smokers.

            (c) 3.5% were cigar smokers.

            (d) 1.3% were non-smokers.

        (2) Death rate from lung cancer goes up in relation to the number of cigarettes smoked.[3]

            (a) The death rate was 34% higher among smokers of up to one-half pack per day than among non-smokers.

            (b) The death rate was 70% higher for one-half pack to one pack smokers.

            (c) The death rate was 96% higher for one and one-half pack smokers.

            (d) The death rate was 123% higher for two or more pack smokers.

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[2] American Cancer Society. Cigarette Smoking and Cancer, The Society, 1966.

[3] "Smoking and Health," Journal of School Health, Vol. 31, No. 10, 1963.

(3) Death rate for lung cancer has risen alarmingly in the last 30 years.[4]

(a) In 1930 there were 3,000 deaths from lung cancer.

(b) In 1965 there were 47,000 deaths from lung cancer.

(c) Only 5% of lung cancer patients are ever cured.

c. Emphysema and chronic bronchitis are among the fastest rising causes of death.[5]

(1) During the last ten years deaths have risen from 4,800 Americans to 20,000.

(2) Most sufferers of these two diseases are smokers.

d. Smoking has other physiological effects.

(1) Tuberculosis, a respiratory disease, is complicated by smoking.

(2) Peptic ulcers are twice as common among heavy smokers as non-smokers.

(3) Asthma is made worse by smoking.

(4) Buerger's disease (disease of the peripheral arteries and veins) occurs more often among smokers.

e. Death rate comparisons of smokers to non-smokers favor the latter.

(1) Heart disease deaths occur in a ratio of ten non-smokers to seventeen smokers.

(2) Chronic bronchitis and emphysema deaths occur in a ratio of ten non-smokers to sixty smokers.

(3) Lung cancer deaths occur in a ratio of ten non-smokers to one hundred and ten smokers.

f. Recent statistics released by the Public Health Service specify effects of smoking on life expectancy.[6]

(1) Average loss in years by persons 25 years of age who smoke amounts indicated below the rest of their lives.

(a) Less than 10 cigarettes per day, the average loss is 4.6 years.

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[4] Ibid.

[5] Ibid.

[6] New York Times, July 7, 1968.

        (b) Ten to 19 cigarettes per day, the average loss is 5.5 years.

        (c) One to two packs per day, the average loss is 6.2 years.

        (d) More than two packs per day, the average loss is 8.3 years.

7. There are other good reasons for not smoking.

    a. Smoking is a fire hazard.

        (1) A carelessly thrown cigarette may start building or forest fires.

        (2) A person smoking in bed may drop off to sleep and the bed may catch fire.

    b. Personal grooming will be affected.

        (1) A cigarette dangling from the lips is unattractive.

        (2) Breath may become foul smelling.

        (3) Clothes and hair will smell of tobacco smoke.

        (4) Teeth will become stained.

        (5) Fingers may show yellow marks of tobacco tar.

    c. Smoking interferes with achievement in some sports since it causes shortness of breath.

8. Teachers should encourage students to consider carefully the decision of whether or not to smoke.

    a. You, alone, must make the decision; no one else can make it for you.

    b. Consider the facts - health, cost, habit, and death risk.

    c. If you don't ever start, you won't have to quit.

    d. Most adults, when asked about smoking, will say, "I wish I had never started!"

    e. Are there really any benefits to smoking?

    f. Your decision either way will affect your entire life.

Instructional Aids

Charts from the American Cancer Society:

1. I Don't Smoke Cigarettes.

2. More Cigarettes, More Lung Cancer.

Instructional Aids - Charts (cont'd)

3. Smoking is Very Glamorous.

4. Smoking is Very Sophisticated.

5. No Smoking - Cancer Control in Progress.

Films:

1. Is Smoking Worth It? American Cancer Society

2. Tobacco and the Human Body, Encyclopedia Britannica Films, Inc.

3. No Smoking, Sid Davis Productions.

4. Smoking and You, Sid Davis Productions.

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LESSON TWO

ALCOHOL

Concept: The effects of alcohol are adverse but a few people are aware of this complex national problem.

Content

A. Alcohol is derived from different sources to be used for various purposes.

1. Non-beverage alcohol is used in industry and medicine. When used for medical purposes, this type of alcohol is limited to external application.

    a. Denatured alcohol is ethyl alcohol to which poisonous substances are added to discourage people from using it as a beverage.

    b. Methyl alcohol, which is made from wood, is so poisonous that even its fumes are harmful.

    c. Non-beverage alcohol has many uses in industry, science, and medicine.

        (1) It is used as a fuel.

        (2) It is used as a solvent and in the manufacture of solutions.

        (3) It is used as antifreeze for automobile cooling systems.

        (4) It is used as antiseptic.

        (5) It is used as preservative for laboratory plant and animal specimens.

2. Alcoholic beverages (those containing ethyl alcohol) are widely consumed.

    a. Ethyl alcohol is produced by the action of yeast (a tiny one-celled plant) upon sugar.

    b. Ethyl alcohol is made from common edible foods.

        (1) It is made from the mash of ground corn, rye, barley, wheat or other cereals.

        (2) Another source is the juices of fruits (especially grapes).

c. The percentage of alcohol varies with the type of beverage.

(1) Distilled liquors such as whiskey, gin and brandy, contain from 40-50% alcohol.

(2) Wines generally contain from 10-20% alcohol.

(3) Beer generally has less than 5% alcohol.

d. Surveys show that over 75,000,000 Americans use alcoholic beverages.

(1) About 231,000,000 gallons of whiskey are consumed annually.

(2) About 500,000,000 gallons of wine are consumed.

(3) This does not include illegal liquors that are made and sold without legal permits.

B. Young persons drink for many reasons.

1. Peer group presses for conformity.

2. The young wish to show independence and maturity.

3. They may be "showing off."

4. They may be trying to overcome feelings of insecurity.

5. They may drink to assert a "right" or a means of defying authority.

6. They may be following the example of parents or other adults who drink to relieve pressures, avoid reality, to boost the ego, to celebrate, or for simple pleasure.

7. They may be influenced by advertising.

a. Advertising tends to make drinking appear stylish and respectable.

b. Advertising links drinking and success by portraying users as successful confident people.

c. Much advertising has sexual connotations.

d. Advertising displays products in such a way that they seem to be thirst quenchers.

C. Alcohol has a profound influence upon the body.

1. Alcohol affects the stomach by causing an excessive secretion of digestive juices which may irritate the stomach lining, even to the point of causing ulcers.

2. One of the first parts of the body to show the depressing effect of alcohol is the brain.
    - a. First affected is the personality and character center.
        - (1) This accounts for loss of self-control, judgment, inhibition, and moral sense.
        - (2) Basically it affects all intelligent behavior.
    - b. Secondly, there is a loss of muscular control.
        - (1) This shows up in slowed reaction time.
        - (2) It causes slurred speech and muscle tremors.
    - c. The sense organs are affected.
        - (1) Vision may become blurred.
        - (2) Ability to judge distances may be lost.
        - (3) Hearing may become impaired.
        - (4) Loss of equilibrium may cause dizziness and staggering.
    - d. As the alcoholic level in the blood goes higher, other effects occur.
        - (1) Breathing rate becomes slower (if too slow, death can occur).
        - (2) Body temperature becomes lower.
        - (3) Heart action and blood pressure may be reduced.
        - (4) It acts as an anesthetic which may produce a state of unconsciousness.
3. Alcohol may damage the liver.
    - a. The liver may become enlarged and inflamed.
    - b. Cirrhosis, the hardening of liver tissues, may develop.
4. Excessive use of alcohol causes nutritional deficiencies.
    - a. Alcohol causes a lack of appetite.
    - b. The body tissues become deprived of food necessary for growth and repair.

c. Vitamin starvation may result in other complications.

(1) It may cause nerve disease.

(2) The danger of infection is increased.

(3) The danger of contracting colds, flu, and pneumonia is increased.

5. Excessive use of alcohol causes other health problems.

a. Large amounts of fluid may accumulate in the brain, causing a reduction in the oxygen supply which may cause permanent brain damage.

b. The small blood vessels in the skin expand with the drinking of alcohol, forcing blood to the skin's surface, thus causing a loss of body heat.

D. Adverse social effects may result from drinking alcohol.

1. Alcohol can destroy family life.

a. Almost 60% of the divorce cases are related in some way to alcohol.

b. The amount of money spent for alcohol may deprive families of other necessities of life.

c. The effect upon children may be adverse.

(1) Children often suffer from neglect.

(2) They become bitter and lose respect for the parent who drinks to excess.

(3) Many cases of juvenile delinquency point to broken homes in which one or both parents were drinkers.

2. Alcohol lowers driving efficiency.

a. It gives a person a false feeling of security.

b. It makes a person a discourteous and hostile driver.

c. Alcohol causes a person's reactions to be delayed.

d. The drunken driver can't see well or judge distances properly.

e. It is harder for him to interpret danger signals like stop signs, stoplights and railroad flashers.

3. Alcohol is closely associated with crime.

    a. Alcohol may result in behavior without intelligent control.

    b. The F.B.I. states that one-third of all crime is associated with alcohol.

4. Alcohol causes many employment problems and great expense to industry.

    a. A worker's efficiency is lowered.

    b. He is more apt to be tardy or absent from work.

    c. Industrial firms lose millions of dollars in unproductive man hours because of alcohol.

5. The great danger of alcohol to both the individual and society is alcoholism.

    a. Any person who consumes alcoholic beverages is a potential alcoholic.

    b. Seventy percent of all alcoholics begin drinking in their teens.

    c. Alcoholism is on the increase in the United States.

    d. There are approximately six million alcoholics in the United States.

    e. Roughly one-half of the alcoholics die before they reach 50 years of age.

    f. Over 20,000 people are admitted to hospitals as alcoholics every year.

    g. Of those who begin to drink, one out of twelve will become an alcoholic.

E. Prevention and treatment of alcoholism.

1. The only sure prevention is total abstinence, the goal of several organizations which work toward this end.

2. Knowledge is an important deterrent to alcoholism.

    a. A good program of alcohol education among our youth and adults.

    b. A good example must be set by parents.

3. Psychological treatment is difficult.

    a. The alcoholic seldom seeks relief.

    b. Treatment is futile without the patient's cooperation.

4. Alcoholics Anonymous has done an outstanding job in treating the alcoholic.
    a. Since 1935 almost 400,000 alcoholics have recovered.
    b. Specific steps are outlined in the A.A. approach.
        (1) The alcoholic must admit he is overpowered by alcohol.
        (2) He notifies a member of A.A. and asks for help.
        (3) He attends regular meetings with other alcoholics who are trying to whip the problem also.
5. The Yale Clinic Plan has helped some people also.
6. Counseling services have been set up by churches and other organizations.

Instructional Aids

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3. Alcohol is Dynamite, Sid Davis Productions.
4. Alcoholism, Encyclopedia Britannica Films.
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LESSON THREE

DRUGS

Concept: One of the greatest dangers facing our youth today is misuse of drugs. Not only is there punishment for violating state and federal laws, but the real danger is in the effects of drugs whose abuse leads to health hazards and disintegration of the individual and eventually society.

Content

A. Drugs are chemicals that have physiological effects on the body. Some drugs affect the mind as well as the body.

   1. Drugs are often used in medicine for treatment of specific ailments.

   2. Drugs help the body to fight certain germs or to relieve pain.

   3. Most drugs are dangerous if misused or abused.

B. Drug abuse includes the wide range of using "harmless" drugs often advertised by mass media to illegal use of "hard" drugs.

   1. Dependence on sleeping pills, stimulants, and instant relief of any form of pain by pills without a physician's prescription, is a form of drug abuse.

   2. Use of hard drugs, which are usually habit forming or addictive, is another form of drug abuse.

C. Drug abuse is a result of many factors.

   1. Influence of the peer group.

      a. The experimenter may wish to show courage and challenge the danger.

      b. The members of the group may convince others to experiment with certain drugs.

      c. Within the group a person steps up from alcohol to marijuana and then to stronger narcotics.

      d. Boys induce girls to drugs with the expectation of greater romantic rewards.

   2. Parental use of stimulants and depressants may convey a positive attitude about drugs, thus preparing children psychologically for drug abuse.

3. Extreme anxiety and insecurity may cause the individual to turn to drugs to escape from reality.

4. Some persons accidentally become addicted through drugs they received during illness.

5. Abusers believe that drugs can help them improve themselves or find solutions to problems.

6. The drug abuse problem, which is a problem of young people, may be viewed as part of the rebellion of youth against society.

D. Drugs have disastrous effects on both the abuser and society.

1. Drug abuse marks the path to waste and destruction.

2. The addict becomes useless to himself or to society.

3. He withdraws from his family and friends.

4. He cannot hold a job.

5. He is forced to deal with criminals to get his supply of drugs.

6. He will sacrifice everything in order to satisfy his need for drugs.

7. About 95% of all known addicts are involved in crime.

E. Treatment is painful and difficult.

1. Physical and mental reactions of withdrawal are violent and painful to the addict; thus hospital confinement is a basic part of treatment.

2. There are several symptoms of withdrawal.

    a. The first signs are dilated pupils, running eyes, and nasal discharge.

    b. From 24 to 36 hours after withdrawal, the addict will experience severe muscle cramps, twitches, fever, nausea, vomiting and diarrhea.

        (1) This stage lasts from three to five days.

        (2) The victim may fear he is dying.

        (3) The patient may become violent and terrified and resort to any means to get the drug to relieve his misery.

3. There are two standard methods of taking an addict off his narcotic, but treatment is difficult and permanent cures are hard to effect.

a. One type of treatment is the gradual withdrawal.

(1) The patient is permitted to receive gradually reduced amounts of the narcotic.

(2) The patient is under the supervision of a physician who controls the amount of the narcotic given.

(3) Over a period of time the amount given is diminished until the craving is controllable.

b. The second type of treatment is that of abrupt withdrawal.

c. Both types of treatment are followed by psychiatric care.

(1) The cause of addiction is determined.

(2) The patient must be geared to live a completely new life.

(3) After the addict is "cured," he may often need counseling services or aid from Addicts Anonymous to keep from returning to narcotics.

d. Major treatment centers are two federal hospitals located in Lexington, Kentucky and Fort Worth, Texas.

F. Drugs come in different forms, and each drug produces its own particular effects.

1. Amphetamines (given such slang names as pep pills, co-pilots, or wake-ups) are pills with legitimate medical uses.

a. Stimulant drugs, the opposite of sedatives, are frequently prescribed by physicians to assist patients who are seriously overweight and to relieve mild depression.

b. These drugs are misused by persons, e.g., students and truck drivers who believe the drug would enable them to maintain mental alertness for long periods of time.

(1) Because tolerance may develop with amphetamines, a user often takes increased doses to achieve the desired result. This often creates hallucination.

(2) These drugs cause the user to become talkative and restless. They disturb normal sleeping habits and leave the patient weak and shaky.

(3) The aftereffects of amphetamines include mental depression, fatigue, and feelings of persecution.

(4) Amphetamines are not physically addictive but can become psychologically addictive.

2. Barbiturates are pills designed for sedation.

   a. Commonly known as "sleeping pills," "candy" and "yellow jackets," these sedatives can easily cause addiction, both physically and psychologically.

   b. A barbiturate is a depressant used effectively by surgeons before and after surgery and prescribed for almost every kind of illness or special situation requiring sedation.

   c. They are used commonly by adults for treatment of insomnia, epilepsy and mental disorders.

   d. Barbiturates can cause acute poisoning.

   e. Addiction to barbiturates is becoming a more serious problem than the abuse of morphine, heroin and cocaine.

      (1) Its use is most common among middle class youth without previous delinquency or criminal records.

      (2) Barbiturate withdrawal is very dangerous involving convulsions and hallucinations, and a failure of muscular coordination.

   f. Barbiturates are often used together with alcohol.

   g. Barbiturates are the second most commonly used agent for suicide.

3. Tranquilizers are used to counteract tension and anxiety without producing sleep.

   a. Chronic abuse of these drugs may result in physical or psychological dependence.

   b. Withdrawal closely resembles that of barbiturates; it can result in fatal convulsions.

   c. To combat misuse of tranquilizers, the F.D.A. has ordered more stringent controls by doctors.

   d. Abuse supplies are usually obtained by having prescriptions refilled in excess of normal needs.

4. Fumes of many common household chemicals are dangerous if inhaled.

   a. Household and hobby products such as glue and cleaning compounds contain benzine, toluene and tetrachloride (extremely dangerous) which are harmful if inhaled excessively.

      (1) These substances, if inhaled, cause intoxication, dizziness, and in extreme cases, loss of consciousness known as "flash-out."

      (2) Repeated use can result in addiction or death.

(3) These chemicals can cause brain damage, destroy liver and kidney tissue, and prevent the manufacture of new blood cells.

(4) Addicted users develop inflammation of nose, eyes, and lung tissues; constantly feel sick, lack appetite and lose weight.

(5) Users may experience personality change, becoming unstable, violent, and subject to losses of memory and lapses of consciousness.

b. Body builds tolerance to these solvents which causes a need for increased amounts.

5. Hallucinogens are drugs that distort perception and cause hallucination. They are found in different forms.

a. Marijuana is the most widely abused drug by young people.

(1) It is the most controversial of all drugs: some claim it to be harmless, others say it is very dangerous.

(2) It is derived from the hemp plant, but its potency varies according to the soil in which it is grown and to processing procedures. For this reason the drug used by any person may be weak or dangerously strong.

(3) Sufficient dosage can put enough THC (tetralydracannabinol) in the body to produce hallucination.

(4) It causes a distortion in the perception of time and space which may lead to fatal results if the subject is not confined or supervised.

(5) It leads to psychological dependence.

(6) Often users of this drug progress to some more serious drugs when they find it no longer satisfies their needs.

b. L.S.D. (lysergic acid diethylamide) is the most potent and dangerous of all hallucinogens.

(1) It is obtained in the form of pills, white powder, or soaked in sugar cubes or cookies.

(2) It is usually taken orally, but it also can be injected.

(3) It affects the central nervous system producing changes in perception, thought, and mood.

(4) Users' experiences cannot be predicted: some experience extreme fear and anxiety, while others experience feelings of supernatural powers such as walking on water or flying.

(5) Psychological changes experienced during a "trip" do not always end by its end. Recurrence of symptoms months later has been observed in many cases.

(6) Physical reactions to the drug include an increase in temperature and blood pressure, hyperactive reflexes, and dilation of the pupils.

(7) This drug is very potent. Two pounds of L.S.D. would be sufficient to intoxicate the entire population of New York City.

(8) It does not cause physical or psychological addiction, but it does lead to extreme emotional shock from which the patient may not recover unless by prolonged psychiatric treatment.

(9) Some advocates of L.S.D. claim that the drug causes them to be inspired and creative. Objective observers have demonstrated that the drug actually impaired intelligence of the users.

(10) Evidence is mounting to indicate that L.S.D. can damage chromosomes. Offspring thus would be deformed.

(11) Much is still not understood about L.S.D. More research is needed to determine the full impact of this drug and whether it could be used for medical purposes. Until this is done, any use of L.S.D. may be disastrous.

c. There are other types of hallucinogens.

(1) Mescaline is derived from the Mexican cactus, peyote. Its use can produce effects similar to those of L.S.D.

(2) Psilacybin is a drug similar to L.S.D. but is not as potent. It is derived from certain mushrooms found in Mexico.

(3) DMT, or dimethyltryptamine, is another rival to L.S.D., but it is less potent. It is often manufactured by college students.

(4) Morning glory seeds also produce hallucination if taken in large doses. Producers of the seeds are aware of this effect so they discourage their illegal use by spraying them with nausea-producing chemicals.

6. Narcotics include a variety of drugs, some of which are used medically to reduce pain. They are all addictive.

a. They have a strong appeal because they reduce or eliminate physical and mental pain.

b. Addiction results from habitual use.

  (1) The user becomes emotionally dependent on the drug.

  (2) He becomes physically dependent on the drug.

c. Treatment is painful and indefinite. Many addicts are lured back to the drug after treatment.

d. The most common types of narcotics are opium and its derivatives, such as morphine, heroin, and codeine.

  (1) Opium is rarely abused in the United States, but is often used to produce other narcotics. Its use causes dreamy stupor, sleep or unconsciousness.

  (2) Morphine is obtained in the form of powder derived from opium. Light doses relieve extreme pain and large ones cause sleep, unconsciousness, or death. Because of its danger as an addictive drug, doctors do not use it in any repeated matter except in the case of advanced cancer when the patient is not expected to live.

  (3) Heroin is another drug obtained from opium. It works like morphine but it is twice as strong. Because of the danger involved, this drug cannot be used legally in the United States for any purpose whatsoever.

  Heroin is an expensive black market commodity.

    (a) Some common names for heroin are "horse," "H" and "caps."

    (b) The victim may be given several heroin capsules free of charge to entice him to the drug.

    (c) Once hooked, the victim needs increasing amounts of the drug.

    (d) The addict may need up to five shots every day, which may cost him $50.00 a day.

    (e) He may become a "junkie" or a peddler and earn his heroin by introducing his friends to the drug.

  (4) Codeine is another drug that may be used as a pain killer. It is used medically to combat the symptoms of respiratory diseases. As a narcotic drug it is not very effective since large doses are needed to produce any effects.

  (5) Cocaine is a non-opiate habit-forming drug.

    (a) Cocaine is obtained from the leaves of the cocoa tree in South America.

(b) Its pleasurable affects are psychologically addictive.

1. It blocks the passage of nervous impulses, so it can be used as a local anesthetic.
2. Used in large doses, cocaine causes a temporary feeling of pleasure and liveliness.
3. This "high" feeling wears off quickly, and the addict has fears and hallucinations.
4. Once the addict is "hooked" he is powerless to stop using cocaine.
5. Because the addict feels he must protect himself from those persons he believes would harm him, his acts often become violent and lead to death.
6. Cocaine does not cause physical dependence or withdrawal sickness, but is a very dangerous narcotic.

Instructional Aids

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3. Hide and Seek, Columbia University Films.
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UNIT TEN

HEALTH AGENCIES

Introduction

There are many public and private agencies that are concerned with health. Some such agencies serve citizens of a community or a state, while others attempt to serve the whole nation and a few are world-wide organizations.

This unit consists of three lessons. They may be taught as follows:

		GRADES			
LESSON	TITLE	5	6	7	8
One	Community Health Agencies	E	-	-	-
Two	State, National, and International Health Agencies	E	-	-	-
Three	Consumer Health	X	-	-	E

Vocabulary

anesthesiologist
anesthetist
cardiologist
dermatologist
endocrinologist
gynecologist
hypochondria
internist
neurologist
nostrums
obstetrician
ophthalmologist
optician
optometrist
otolaryngologist
otologist
pediatrician
proctologist
psychiatrist
quackery
quarantine
radiologist
rhinologist
urologist
venereal disease

LESSON ONE

COMMUNITY HEALTH AGENCIES

Concept: It is important to gain knowledge of places and people who promote and maintain health in local communities.

Content

A. Hospitals are places where sick or injured persons are fed, lodged and given medical treatment by a hospital team consisting of:

1. Physicians are medical doctors who help diagnose and treat disease or illness.

    a. A surgeon is a medical specialist who practices surgery.

    b. An internist is a medical doctor who makes diagnoses, and treats internal diseases.

    c. A pediatrician is a specialist in the medical science which deals with the health of children.

    d. An obstetrician is a doctor who helps in childbirth and assists mothers during pregnancy and labor.

    e. A dermatologist is a physician who specializes in diseases and treatment of skin problems.

    f. A radiologist is a specialist in using X-rays and radioactive substances.

        (1) X-rays and radioactive substances are used to determine organic function of the heart, the stomach, etc.

        (2) They are also used to cure or stop the spread of cancer.

    g. A psychiatrist is a physician who is also specialized in mental and emotional health.

    h. An ophthalmologist is a medical specialist who deals with the structure, function and diseases of the eye.

    i. Optometrists and opticians are not medical doctors.

        (1) The optometrist measures the eyes' refractive powers and fits glasses to correct defects.

        (2) An optician is one who makes optical apparatus (grinding lenses and fitting glasses).

   j. A neurologist is a specialist who deals with diseases and treatment of the nervous system.

   k. An anesthesiologist is a medical doctor who specializes in giving anesthetias, substances which produce an entire or partial loss of sensation, while an anesthetist is a nurse who has been trained to administer anesthetics.

   l. A cardiologist is a doctor who deals with heart diseases.

   m. An endocrinologist is a doctor who studies and treats diseases arising from malfunctions of the endocrine system.

   n. A gynecologist deals with diseases of the female reproductive system.

   o. An otologist is a medical doctor who specializes in disorders of the ear.

   p. An otolaryngologist is a specialist who deals with throat and ear problems.

   q. A rhinologist is a doctor who treats disorders of the nose.

   r. A urologist specializes in problems of the genito-urinary tract.

   s. A proctologist treats disorders of the rectum and anus.

   t. A dentist is a specialist in the care of teeth and supporting structures in the mouth.

   u. An orthodontist is a specialist dealing with prevention and correction of irregularities of the teeth.

2. Registered nurses are persons with specialized training qualifying them to assist physicians.

   a. Training may consist of three years in an accredited hospital or college of nursing, followed by a state board examination.

   b. Another type of training involves 4 or 5 years of study and the state board examination leading to a B.A. degree.

3. The LPN is a licensed practical nurse who has had one year of training in routine patient care, and works under the supervision of registered nurses or doctors.

4. Nurses' aides are not medically trained; they assist patients under a nurse's direction.

5. Rehabilitation specialists are persons specially trained in helping rehabilitate the ill or injured under medical supervision.

   a. The occupational therapist teaches new skills for jobs or for psychological well-being.

   b. The physical therapist is a person who trains a patient in re-establishing the use of muscles, joints and body function through special devices.

6. The dietician is a trained person who plans meals, diets and food combinations for the patients.

7. Technicians are trained personnel who do a variety of laboratory procedures under the supervision of physicians.

8. A pharmacist is a chemist licensed to prepare and dispense drugs.

9. Receptionists, clerks, maintenance personnel for general administration and maintenance.

B. Clinics are centers for physical examinations and treatment of ambulant patients who are not hospitalized.

   1. Some clinics are for diagnostic purposes, e.g., the Mayo Clinic.

   2. Others are specialized clinics, e.g., heart and mental health clinics.

   3. Local health department clinics are free or low cost agencies.

      a. They supervise maternity patients and young children.

      b. They immunize against communicable diseases.

      c. They provide dental care and diagnosis and treatment of disease for the medically indigent.

C. Local county health agencies, financed partially by taxes and administered by the local government, exist to protect citizens from disease.

   1. They provide a public health nursing service.

      a. The nurse visits homes which need her services.

      b. She works in clinics of the health department.

      c. Such nurses serve public schools where there is no school nurse.

      d. They try to educate citizens to their health responsibilities.

2. Sanitarians and inspectors are responsible for:

   a. safe drinking water
   b. sewage disposal
   c. sanitary food handling
   d. inspection of food
   e. insect control
   f. checking air and radiation pollution.

3. A statistician is provided who collects and interprets figures on health conditions, thus providing a statistical picture of the community's health and population: births, deaths and communicable diseases.

(Instructional Aids and References are provided at the end of this unit.)

LESSON TWO

STATE, NATIONAL, AND INTERNATIONAL HEALTH AGENCIES

Concept: Many organizations have been created to deal with health problems at the state and federal levels, as well as on a world-wide basis.

Content

A. The State Health Department is responsible for the overall health program of the state.

1. It furnishes advisory and consultant services to local and county agencies.

2. It administers financial aid to local health departments.

3. It enforces the state legal requirements.

    a. Communicable diseases are thus controlled.

    b. Research projects in local county departments are thus carried on.

4. The health department serves as a "middleman" between the United States public health services and the local health agencies.

5. It assists the local health departments with their functions.

B. United States Public Health Service.

1. The United States Public Health Service is currently under the Department of Health, Education and Welfare.

2. The director is the Surgeon General of the United States.

3. This department has a variety of vital functions.

    a. It administers quarantines to keep immigrants and travelers from importing communicable diseases from other lands.

    b. It administers quarantines domestically, as well, checking interstate communicable diseases and contamination.

    c. It cooperates with the states in providing special services, technical personnel and consultants to the states who request help with particular problems such as

        (1) tuberculosis
        (2) venereal disease
        (3) mental illness
        (4) drug addiction.

d. It provides scientific research and field studies on various diseases through the national institutes of health.

e. It enforces the Food, Drug and Cosmetic Act of 1938.

f. It develops health measures for Civil Defense emergencies.

g. It participates in the World Health Organization.

h. It prepares programs for water and pollution control.

i. It conducts and supports research and technical aid in air pollution.

j. It heads the Bureau of Animal Industry which is responsible for inspection of meat and meat products.

k. It provides health and medical care for Indians and native Alaskans.

C. World Health Organization (WHO) attempts to promote international cooperation for better health throughout the world. Bad health conditions in one part of the world are almost certain to affect the health of people in other parts of the world.

1. The World Health Organization is a special agency of the United Nations.

2. The activities of WHO fall into three general categories.

a. Advisory services and financial support are provided for countries that need help for the control of communicable diseases, for the improvement of public health services and for training of public health workers.

b. It provides technical services for the improvement of water supplies and sewage disposal, for the development of reliable records on diseases and deaths, and for the standardization of vaccines, drugs, and health research.

c. It provides emergency aid to governments in dealing with epidemic diseases such as malaria and typhus.

(Instructional Aids and References are provided at the end of this unit.)

LESSON THREE

CONSUMER HEALTH

Concept: It is important to be able to locate sources of the best and most reliable advice concerning health matters.

Content

A. In spite of efforts by many medical and educational agencies, quackery remains a serious problem in our country.

1. Quackery is the practice of medical therapy by a fake or incompetent person with little or no professional health preparation.

2. There are many types of quacks.

    a. The uninformed quack knows very little about what he treats. He often believes that he has discovered a secret formula that is a "cure-all."

    b. The deluded quack may have some education, including some medical preparation but he usually knows little about the conditions or illnesses that he treats. He knows little of the difficulties that may be associated with a person's illness. This type of quack, however, uses scientific-sounding language to impress his customers.

3. Americans spend more than two billion dollars a year on quackery, seeking cures for such common diseases as arthritis, rheumatism, and cancer; for psychological aid; and for self-prescribed laxatives.

4. Quackery exists in our society because of ignorance and unwillingness to face the truth.

    a. Many people do not know the difference between a medical doctor and a quack.

    b. People with terminal illnesses would sometimes rather accept the misconceptions and half-truths of a quack than the truth from a physician.

    c. Hypochondriacs have persistent anxieties about their health and go to any length to be treated for their imaginary illness.

5. Certain signals should arouse suspicion that a practitioner may be a quack.

    a. He guarantees a quick cure.

    b. He uses a special or "secret" machine or formula he claims can cure a disease.

c. He advertises or uses case histories and testimonials to promote his cure.

d. He claims medical men are persecuting him or are afraid of his competition.

e. He uses "scare" methods to arouse fears of disasters that may befall one unless one uses his products.

6. Quacks use various methods in peddling their products.

a. House-to-house peddlers attempt to discuss one's health problems, attempting to sell an innocent person something for whatever ails him.

b. The quacks may hire a hall or hotel room and advertise a free lecture to promote sale of their products.

c. Mail order quackery, at an all time high, applies particularly to products claiming nutritional miracles and benefits in weight reduction.

d. Books and pamphlets claiming quick cures are questionable as the law does not compel printed materials to be scientifically accurate.

7. Many Americans are being victimized by quacks.

a. Cancer patients are probably the most frequently victimized patients. They are offered hope by quacks who claim sure cures.

b. Since there is no known cure for arthritis, quackery thrives on arthritics by offering pain killers, copper bracelets, harnesses to stretch limbs, and electrical devices. The FDS has ruled such devices useless, but 14 out of 100 arthritics use some such devices.

c. Food faddists are encouraged by a group of diet quacks who proclaim that mental and physical illnesses are caused by commercially produced foods, flouridation, etc. Other diet quacks advocate garlic pills for high blood pressure, grapes to cure ulcers, etc.

d. Weight reducers are easy prey for the quack. Often the patient is assured that by taking a few pills he will be able to lose weight and still eat what he wants. The AMA has proven most of these reducing methods are worthless, harmful, or misleading.

e. Patients with emotional or personal problems are often victims of the psychoquack who claims cures which range from stopping nail biting to a cure for alcoholism. These quacks convince customers that emotional or personal problems are easily solved. Their treatment sometimes leads to suicide or commitment to a mental hospital.

f. There are many less obvious forms of quackery which profit from beauty aids which claim that nostrums make a person look and feel younger, quick cures for baldness, and similar claims.

B. Consumers can protect themselves by obtaining reliable information on medical personnel and medical products, and by learning about the responsibilities of key health agencies.

1. The Food and Drug Administration (FDA) functions to protect consumers. It assures

    a. safe, pure, and wholesome foods and dietary supplements.

    b. safe and effective drugs and therapeutic devices.

    c. safe cosmetics.

    d. truthful information on labeling.

    e. adequate warning labels on hazardous household chemicals.

2. Federal Trade Commission (FTC) is an independent government agency that enforces truthful advertising by

    a. investigating misleading claims.

    b. taking legal action for penalty if untruthful advertising is not stopped.

3. The U. S. Post Office is another protector of public health by denying use of mails to promote fraudulent schemes. They do this by

    a. investigating citizens' complaints.

    b. taking legal action for penalty if charges are proven.

4. Professional societies are active in protecting health of citizens.

    a. The American Medical Association (AMA) and local medical societies are physicians' groups who help establish standards and ethics for medical doctors. They also investigate the many types of health quackery.

    b. The American Dental Association evaluates dentifrices, mouthwashes and dental appliances for which therapeutic claims are made.

    c. American Dietetic Association, American Home Economists, American Nurses Association, etc., help in establishing standards and evaluating products and services in their own fields.

Instructional Aids

Films:

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   Public Health Nurse, Publication 47, 1966.

   Consumer Protection, FDA - Packet A - Foods, 1966.

   Consumer Protection, FDA - Packet B - Drugs and Cosmetics, 1966.

APPENDIX A

DISTRIBUTION OF LESSONS OF PART II AMONG VARIOUS SUBJECTS

UNIT	LESSON	SUBJECT OR DEPARTMENT
One	One: Safety, Hazards and Accidents	Physical Education
	Two: First Aid	Physical Education
	Three: Disaster Procedures	Physical Education
Two	One: The Cell	Science
	Two: The Skeletal System	Science
	Three: The Muscular System	Science
	Four: The Skin	Science
	Five: The Circulatory System	Science
	Six: The Respiratory System	Science
	Seven: The Nervous System	Science
	Eight: The Digestive System	Science
	Nine: The Excretory System	Science
	Ten: The Endocrine System	Science
	Eleven: The Reproductive System	Science
	Twelve: Growth and Development	Science*
	Thirteen: Heredity	Science
Three	One: Role of Family and Individual	Language Arts
	Two: Personality	Language Arts
	Three: The Sex Drive: Attitudes and Behavior	Language Arts
Four	One: Developing a Sensible Food Plan	Physical Education
	Two: Newest Findings in Nutrition	Social Studies
Five	One: Exercise and Good Posture	Physical Education
	Two: Rest and Sleep	Physical Education
Six	One: Attitudes and Appearance	Language Arts
Seven	One: Health and Disease	Science
	Two: Communicable Diseases	Science
	Three: Non-Communicable Diseases	Science
Eight	One: Basic Human Needs	Language Arts
	Two: Human Emotions	Language Arts
	Three: Adjustment	Language Arts
	Four: Maturity, Values, and Behavior	Language Arts
Nine	One: Tobacco	Science
	Two: Alcohol	Science
	Three: Drugs	Science

UNIT	LESSON	SUBJECT OR DEPARTMENT
Ten	One: Community Health Agencies	Social Studies
	Two: State, National, and International Health Agencies	Social Studies
	Three: Consumer Health	Social Studies

*In addition, physical education classes should provide opportunities for boys and girls to discuss personal hygiene problems with their teachers.

A TEACHING PROGRAM IN
HEALTH AND SEX EDUCATION

PART III

FOR HIGH SCHOOL STUDENTS

UNIT ONE

PERSONALITY

This unit presents a brief introduction to the study of personality. After a definition and analysis of the dynamic nature of personality, the authors will discuss some of the major forces that influence the development of personality and shape it into its unique individual form. Later sections in this course will provide further information on this subject.

Definition: -The Webster dictionary defines personality as the "organization of the individual's distinguishing character traits, attitudes, or habits." This definition is inclusive of the total psychological make-up of behavior of man. It is descriptive of the basic qualities and behavior of man, his emotional response as well as his perceptual and cognitive capacities. According to this definition personality is multidimensional and as such, should be described in terms of its various components. The concept of trait is especially useful if we are to understand the meaning of "personality components."

A trait is a distinguishing personality characteristic and may be looked at as a quality that characterizes an individual's (or a group's) typical behavior. According to this definition, a person may be described as being aggressive, affectionate, perceptive, confused, or withdrawn if such qualities are generally typical of his behavior. Since personality is a complex organization of numerous traits, it is best described in terms of the totality of the various traits an individual possesses.

Complexity of Personality

It is not possible to list the number of traits that make up an individual's personality. It is a well established fact that the complexity of the psychological self makes it impossible to draw a complete profile of any individual's personality. A study[1] on trait names completed in 1936 found approximately 18,000 words in the English language that refer to personality qualities or traits. Even without knowlege of this study, high school students can list hundreds of terms that are descriptive of personality qualities. Words such as sincere, quiet, aggressive, cheerful, naive, serious, humorous, and thousands more are indicative of traits we observe in ourselves and in other people.

However, an informal description of an individual's personality may be based on the most significant and dominant traits he exhibits. It is common to describe a person in terms of a few important traits that characterize his behavioral responses although this may be an oversimplification of his complex personality.

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[1] Allport,G.W.and Odbert,H.S. "Trait Names: A Psycho-lexical Study." Psychol.Mnogr.,1936,47. No.1.

It is worth mentioning at this point that certain traits are rather universal and can be found in almost all individuals in a group or a society. Other traits are less common and can be found only among a few individuals. To illustrate this point the reader may consider the two traits "ambitious" and "alarmist" the first of which refers to a trait that is commonly present among many people while the second is a quality known in more limited cases.

A society or a nation may be described in terms of the major common traits its members exhibit. The term "national character" describes those traits that are common to the whole nation in general, although some such traits do not apply to some of the individuals within society. To illustrate this point one may describe the American society as being pragmatic, progressive, and affluent.

Dynamic Nature of Personality

Behavior, which is the action phase of personality, is determined by the psychological make-up of the individual and the environmental conditions in which behavior occurs. A multitude of forces influence behavior. An individual's personality is constant interaction with his environment. As a result environment may influence the shaping of personality and may be modified by the ensuing behavior. To illustrate this point let us consider the case of the boy who tends to bully other boys smaller than himself in size. Due to some new situation he may find himself in the company of boys his size or bigger. The new situation may cause him to abandon his previous aggressive behavior, or at least to conceal it. This change in behavior may be either temporary or permanent, but it is illustrative of the dynamic nature of personality.

Development of Personality

Historical Review: -

Over the past few centuries and as late as 1940, two basic theories of development dominated the thinking of philosophers and scientists. The first took a predeterministic or a preformationist approach with the assertion that all the qualities of an individual including his personality are present at birth. Growth unfolds all individual qualities at the right time, but it brings very little or no qualitative changes. The only changes that take place are quantitative and the infant grows up to become an adult. Illustrations of these notions are found in the pre-scientific belief that the sperm contained a miniature man that simply grew in size and was born nine months after being implanted in the uterus of the female.

Although more enlightened thoughts on development were introduced by J. J. Rousseau (1712-1778) and by G. G. Stanley Hall (1846-1924), the importance of development as a process involving both quantitative and qualitative changes was generally ignored.

An opposite view to the one stated above minimizes the contributions of inner or genic regulatory forces. This approach is generally labelled "tabula rasa" or the "blank slate." It emphasizes the significance of environment in development and supports the notion that man is born without fundamental predispositions or qualities, and that whatever an individual develops into is strictly the result of environmental factors.

The two approaches described above contained various viewpoints each. In general, they both took an either-or approach to the study of development and refused to acknowledge the role of either the genic endowment or environmental factors.

This long debate, known as the nature-nurture controversy, gradually led to a more plausible position. Although disagreement regarding the relative influence of heredity and environment still persists, the prevalent view today asserts that man is a product of continuous interaction between heredity and environment. Man at any moment of his life is the total outcome of all preceding forces, genetic and environmental, that become significant as early as the moment of conception.

Relative Influence of Heredity and Environment

Interaction between genetic and environment determines the manifestation of inherited elements and the extent of fulfillment of potential capacities and dispositions. The relative influences of hereditary and environmental factors varies from one trait to another. Evidence from various scientific investigations that considered genic and environmental variables, indicates that physical properties or features are least affected by environmental influences. The only exceptions to this fact are found in body height and muscular development since both are highly influenced by environmental factors, especially nutrition and exercise. Examples of physical qualities that are least affected by environment are: color of eyes and hair, shape of nose and cheeks, type of hair, and many other physical features.

On the other hand, intellectual capacity and other psychological traits, such as one's emotional disposition, interests, and attitudes, are significantly influenced by environmental factors. It will be pointed out later that learning is responsible for development of one's attitudes and values.

The role of heredity is confined to the genetic combination of properties from both parents. At the moment of conception a new being is endowed with qualities unique to him as an individual. Except in the case of identical twins where both twins carry the same genetic composition, every individual is then unique. However, similar environmental conditions, including common socio-cultural settings, may provide common psychological traits to various individuals. This fact provides an explanation for the common personality traits we often observe in members of the same family, group, social class, and society.

Environmental Influences

Prenatal development, which starts with conception and continues till birth, is subject to environmental influences that affect the fulfillment of genic capacities. There is scientific evidence that nutrition of the mother and the effects of chemicals and drugs have some influence on the direction and rate of growth of the fetus. The authors know of no studies that shed light on the environmental influences on personality at this stage of development.

During infancy and later during early childhood the physical environment continues to have its impact on development. In addition, birth marks the beginning of social environment which is composed of the attitudes, emotions, values and behavior of other people, especially the infant's immediate family. This environment, like the physical environment, starts to influence the development of the child's personality.

While there is universal agreement among psychologists that the adult's personality is primarily a result of his early life experiences, it should not be forgotten that later experiences during late childhood, adolescence and adulthood also play significant roles in shaping the individual's personality.

Infancy and Early Childhood

From the moment of birth and during infancy the infant is completely dependent on others to satisfy his basic needs. These basic needs are food, shelter, and security. The behavior of the infant is self-centered and aims at self gratification. In general, the infant derives his feeling of security from others surrounding him, and especially from his mother, in the same manner he derives food.

During the first six months the infant is not aware of the potential threat of harmful stimuli. Loud or unexpected noises, sensations of falling, or extreme changes in temperature seem to bring fear or anxiety, but this is evident only after the second or third month of life. Before that age the infant does not seem to be capable of expressing any specific emotions. Rather, the only emotional response that has been observed is a general emotional excitement.

The first three years of life bring the child a certain sense of identity. Now he has an image of himself and of the world of his existence. The child's conception of himself in terms of his sexuality, or gender, emerges and is enforced by the manner he is handled and spoken to, and by the role his society dictates for his sex. A large multitude of sex-distinguishing properties surround him in his daily living: his name, clothes, toys, games, and more significantly, the behavior of males and females he comes in contact with.

Middle childhood brings a decrease in fear of noise and of new objects and faces as the environment becomes more familiar. A growing awareness of society, a group of people, becomes evident, and the child now moves away from individual activities to group games and make-believe. At this stage the child is capable of experiencing most emotions such as fear, love, anxiety, anger, jealousy, envy, joy, and boredom.

Gradually, the basic traits of personality - emotional response, values, attitudes, and cognitive structures - are thus developed by the continuous interaction of heredity and environment. Given the biological basis of genic endowment, experiences in early childhood and in later years mold the individual into a unique human being.

Role of Learning

The above discussion begs the question of the role of learning in personality development. It has already been mentioned that the child gradually becomes more aware of himself and of his world. Starting with birth and continuing throughout life, the individual continues to be exposed to events that surround him. This exposure causes the individual to be affected by the attitudes and values of his group and by the manner and style of life, thinking, and speaking of the members of his family and society. In other words, the child learns consciously and unconsciously from his environment.

At the beginning the infant does not show much ability to learn. Gradually he learns to cease crying when held, especially when there is anticipation of being fed. Later, the child learns to respond to certain faces and to specific expressions of faces. As he grows older, the child learns language, develops habits of living, and develops powers of thinking and reasoning. He learns about his world, and responds in a manner generally acceptable by his parents and peers. He becomes a part of his society. The process by which an individual becomes part of his society is called socialization.

Socialization of the child is a gradual and often an unconscious process. The child acquires attitudes and personal preferences from the group. He learns to like or dislike certain foods, and learns the symbolic meaning of colors. Even his style of walking and running is influenced by the common examples set by other individuals of his society. An interesting example to illustrate this point may be found in comparing the manner of walking by an Englishman and a Chinese, both reared in their native lands.

Nevertheless, learning and environment do not account for all the forces that shape an individual's personality. As stated earlier, the genic composition of the individual provides the potential for certain developmental capacities for both physiological and psychological development. Advanced students of chemistry, bio-chemistry, and medicine know for example, that there are behavioral dispositions that are a result, directly or indirectly, of inherited chemical and neural properties. The relationship between thyroid functioning and general activity is very well known. Some scientists claim that the general level of tolerance against psychological distress is also genetically determined.

In conclusion, it is essential that both heredity and environment be recognized as significant forces in determining the personality of an individual. The interaction between the two is continuous and dynamic. Development of personality with all its traits is a complex process involving genic capacities as well as environmental influences. Early childhood is the stage of development that is most important but significant experiences in later years may be very significant too. Psychological rehabilitation or traumatic and unusual experiences may result in significant personality changes.

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UNIT TWO

MENTAL HEALTH

Health is a state of well-being. It enables the individual to lead a useful and satisfying life free from physical ailments and psychological disorders. This means that mental health is an important phase of total health, and thus will be studied in some detail in this unit.

Good health is somewhat difficult to define unless new terms and concepts are studied first. Generally, the term "adjustment" is used by psychologists to describe mental health. Adjustment is the process by which an individual adapts himself to meet his needs in various situations. Satisfying physical needs is a relatively simple matter as there are no alternatives for the individual to choose from. A hungry man must eat, and a thirsty one must drink, or die. On the other hand, man's psychological needs are complex, and it is not known that deprivation of such needs causes death. It is known, however, that individuals differ in their behavior as they seek satisfaction for their psychological needs. The need for acceptance and approval by one's peers and associates is a very significant need. Adequate adjustment makes it possible for an individual to achieve his goals in a socially acceptable manner.

Philosophers and psychologists generally agree that proper adjustment is the key to happiness. A well-adjusted person is mentally healthy, and is usually capable of coping with a large variety of problems without excess distress or emotional disorder.

In trying to develop a common ground for understanding mental health, we may look for characteristics that are common to those people who appear to have achieved a comparatively happy and socially acceptable adjustment to themselves and to the total social setting in which they are found. It is possible then for us to conclude that characteristics common to such persons are indicators of mental health.

Indicators of Mental Health

The mentally healthy person, first of all, respects himself. It is not that he is vain or conceited, in fact he is well aware of his shortcomings, but he knows his abilities and wants to use them. He works hard to reach his goals, and if he should fail he is not ashamed, for he knows that he did the best he could. In short, he is able to "live with himself" quite comfortably. He knows that as a member of the human race he has unique abilities and obligations, and that his well-being and happiness are of concern to other members of the human family.

A second indicator is self-control. A mentally healthy person is able to control his own actions and, to some extent, can exert some control over his environment. He understands that he has feelings, often very strong and deeply rooted, but he has learned to control them. Part of maturing is the development of more satisfactory ways to express and control emotions. The mentally healthy person's life is not guided entirely by his feelings. He does not suppress honest emotions, but neither is he a slave to them. In this manner he is able to meet the demands and problems of life head-on and do his best to solve them. He is not adrift in the seas of life. He makes plans and acts to exert some control over his own destiny. At the same time he must realize that many things are beyond his control. He already knows that life is full of set-backs and disappointments as well as successes, and he has learned that he must try to take them all in stride. He is serious about life, but he has learned to "roll with the punches."

A third characteristic of the mentally healthy person is that he maintains good relationships with other people. A mentally healthy person trusts and likes other people and expects them to like and trust him. He is able to recognize his own hopes and fears and his own techniques for controlling these feelings. Thus he develops an understanding of such defensive behavior as bullying, boasting, jealousy, hostility, shyness, and withdrawal. Because he has respect for others he learns to be part of a group even when that causes him to give up part of his own individuality. The mentally healthy person does not associate with others only to acquire acceptance or approval, but, also because he has something to contribute. He feels a responsibility for his fellow man and does not try to shirk his duties or get away with "second rate behavior." He is devoted to loved ones, loyal to friends, and kind to everyone.

We would be fortunate indeed, if we could honestly feel that we measured up in every way to all the standards that we have set for the mentally healthy person. Most people usually fail to live up to such standards in some way or another. Practically everyone frequently fails to meet certain of these standards. In fact it doesn't take much insight to understand that "perfect" mental health is rare to the point of non-existence. Therefore, one's mental health may be described as "good" or "poor" relative to how close to the ideal his adjustment to himself and to society may be.

Emotions

In order to understand the meaning of the term "emotion" we must first deal with two related concepts: behavior and motivation. The term "behavior" describes all of man's activities, his physical and biological processes as well as his thoughts and feelings. It is inclusive of common and easily observed movements as well as neural and chemical processes, some of which may be difficult to observe unless complex electronic devices are used to detect them.

All behavior is "motivated." There are motives or forces that cause us to behave as we do. This assertion has had a significant impact on the study of behavior. Psychologists now try to find why a person behaves the way he does. In general, it is found that behavior is directed toward the fulfillment of some need or urge.

It is important to remember that psychological needs as well as the more obvious physical ones are constant influences on behavior. However, man's behavior which is aimed at fulfilling physical needs is relatively simple to analyze; while behavior that aims at fulfilling social or psychological needs is very complex. Furthermore, behavior may be motivated by a variety of forces at the same time; thus it is aimed at meeting more than one need. It is worth pointing out again that all behavior, whether it is rational or irrational, desirable or undesirable, is motivated by physical or psychological needs.

The above discussion leads us to the study of emotion. "Emotion" is a term used by psychologists to describe in a very general way the feelings and sensations within us that can motivate our behavior. Emotions always originate in a psychological situation where they may be associated with pleasantness or unpleasantness.

Emotional behavior is noted for its intensity: the muscular response can be stronger than that involved in any other kind of bodily reaction although it is modified by age and experience. Perhaps most distinctively, strong emotional response includes widespread and violent visceral changes affecting the circulatory, respiratory, digestive and glandular systems as well as the skeletal muscles.

How many emotions are there? From our experience, we can recognize a great many emotions such as fear, anger, disgust, distres , grief, shame, remorse, jealousy, love, wonder, elation and many others. The question of how many becomes more complex when we realize that age and experience have a great deal to do with the number of emotions one can experience. Studies based on adolescents and adults which pay close attention to the various feelings and impulses that mark emotional states show a very large number of emotions. There are many reasons to believe, however, that the complex emotions of adolescents and adults are blends of previous emotional and intellectual experiences all greatly modified through learning. For example, anger and shame differ in their conscious feelings and also in the attitudes and behavior that accompany them. Yet when one feels shame, for instance, he may experience not only that basic emotion, but also an attitude of unfavorable self-evaluation, molded by the culture in which he lives, and further modified by his own particular learning experiences. Shame may be associated with self-devaluation and perhaps rage at other individuals or objects.

Emotional Development

Watching the step-by-step development of behavior of infants has been one of the ways scientists have used for identifying and categorizing human emotions. We can observe emotional behavior in babies almost from the moment of birth. At this point in life one has not learned any control over his emotions. It is widely accepted that we are born with a certain predisposition for many emotions. Most of the studies on the development of emotion in infants seem to agree that from birth some emotions are in evidence. In their book, The Psychology of Adjustment, Shaffer and Shoben[1] cite a comprehensive study by Katherine Bridges (1932) in which sixty infants were observed daily over a period of several months, behavior patterns were carefully observed. Excitement or a general state of agitation seemed to be the only emotion in evidence at the very beginning. By three weeks of age, though, it was considered possible to differentiate between distress and excitement and by two months to distinguish delight. By six months distress was further differentiated into anger, disgust, and fear, while delight has given rise to elation, joy, and affection or love. For our purposes in this course it still seems useful for us to accept the findings of John B. Watson, also cited by Shaffer and Shoben.[2] His study, completed in 1919 on four and six month old children, has influenced most of the later studies done in this field. He is believed to have discovered three primary emotions in infants: fear, caused by loud noises or by falling; rage, resulting from restraint of movement; and love, in response to stroking or petting. As we grow from infancy through childhood and adolescence and then into adulthood, we develop literally dozens of specific emotions. Most of the later studies support the premise that specific emotions can be categorized as a product, an outgrowth, or a combination of two or more of the basic human emotions.

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[1] Shaffer, Laurence F., Shoben, Jr., Edward J., The Psychology of Adjustment, Boston: Houghton Mifflin Co., 1956, p.46.

[2] Ibid.

It is important to realize that our responses to emotional stimuli are greatly influenced by learning. This is perhaps more easily understood if we can allow ourselves to think about how quickly and thoroughly a very small child seems to learn that certain emotional behavior brings desirable results and can be used effectively again and again. He also learns to modify or abandon other types of behavior which bring him unpleasantness. This process of refinement of our emotional responses which goes on throughout our lives, will be examined in greater depth when we deal with adolescence and young adulthood.

Emotional Maturity

The mature individual is said to have control over his emotions. With this in mind, let us consider what is meant by emotional maturity and emotional control and how the mature individual differs from the immature.

Understanding both our own emotions and those of other people is essential to an individual's emotional maturity. For example, a two year old often kicks and screams when he is thwarted from some desired activity. Adults take this reaction for granted and excuse his behavior as they say or think "he is just a baby and emotionally he behaves like one." However, if a six year old behaves the same way we say "he is naughty." When a nine year old has a kicking and screaming tantrum in this situation, we say, "he is spoiled," but such conduct from an adult would be regarded either as hysterical or a sign of emotional immaturity. Through this one example, we can show how a person who is emotionally mature can understand and even identify emotional immaturity. Even though it is not always so obvious, an understanding of socially acceptable behavior is necessary if one is to make judgments concerning his behavior and that of others.

Socially Acceptable Control of Emotions

As a child grows up within his social environment he learns how to dress and act according to the standards of his group, how to speak the common language, and how to express feeling and emotions according to conventional norms. In short, he learns the ways of his group. For example, the shedding of tears is universal in weeping, but cultural factors determine the time, the place, the circumstances, and even the amount of weeping which is acceptable. In contemporary America a man is expected to refrain from tears in public, and a boy is taught that it is "sissy" to weep openly. However, in mid-Victorian England, a gentleman could weep openly and quite conspicuously at theatrical performances and during sermons and concerts. In that particular country, day and age it was socially acceptable for a man to display his emotions in that manner. Thus, a gentleman might take out his handkerchief and weep openly at the story of the death of one of Charles Dickens' characters and no one in the audience would think anything about it. Today styles in weeping have changed considerably. Most people express joy by a smile or laugh, but in certain societies there is no marked difference between demonstrations of joy when, for example, meeting a long absent relative and those of grief upon the death of one of their close associations. In either or both instances a stranger might easily suppose that a great deal of sorrow had befallen them. But, for those people, weeping is considered the socially correct form of greeting.

Whatever the expected pattern may be, the child learns to conform. A great deal of emotional development seems to consist of suppressing normal biological responses in the interest of conformity. The child learns not to smile and laugh at the misfortunes of others; not to show fear in the face of danger, but to act courageously; not to weep as an appeal for sympathy; not to show anger when frustrated or thwarted, but to act within the bounds of "correct" manners; not to show love and hate indiscriminately or in bad taste, and so on. Therefore, a person must learn to inhibit many of his emotional responses, in order to live harmoniously in society.

The development of facial expressions and gesture in communication is another aspect of social development. Whether at a birthday party or at the office we learn to put a smile on our face and say agreeable things. But this does not necessarily mean that our love or affection has been emotionally aroused.

In developing further the concept of emotional maturity, it is necessary to contrast this state with the very commonly applied term "emotional immaturity." We will use this term to mean "a pattern of emotional behavior which is more like that of a child than that of an adult." In referring to temperamental differences in adults, it would be well to keep in mind the contrast between the emotional behavior of the immature and the mature individual. Some contrasts between the emotional reactions of children on the one hand and adults on the other, seem to help show the contrast between emotionally mature and immature behavior.

Degree of Frustration Tolerance

The first important contrast between the emotional behavior of an infant or young child as opposed to that of an adult is the degree to which frustration can be tolerated. The infant is markedly intolerant of physical or psychological discomfort. Hunger pains, a bath that is too cold or too warm, restraint of free movement, the prick of a pin, unusual sounds, a toy just out of reach -- all these arouse an emotional display in the infant or young child. The older child is more tolerant. Instead of crying like a baby at every mishap, a child becomes more able to withstand disappointment and pain with increasingly fewer signs of disturbance.

A second contrast between the emotional behavior of child and adult is a decrease in the frequency and intensity of emotional upset as the individual matures or "grows up." An adult doesn't show outbursts of anger so frequently or so intensely as a child, nor does he so often give way to weeping. When the adult pinches his finger, he does not scream as loud as he can. If insulted, he does not go into a towering rage, but keeps the degree of response within pre-determined socially acceptable limits.

A third contrast may be seen in the difference between child and adult in the impulsiveness of behavior. The child cannot wait to express anger, joy or fear. He must respond without delay. In anger, he strikes; in joy, he jumps up and down; in fear, he cries out or runs away; in pain, he screams. An adult, in contrast, is able to delay his response and manifest less impulsiveness.

A fourth important difference between the emotional behavior of child and adult is the attitude of self-regard. Injury to the human ego awakens in the child a self-pity which is out of all proportion to the pity felt by sympathetic onlookers and comforters. It is unrestrained. In pitying his own injuries or mishaps, the mature person appears to feel no sorrier for himself than others would feel for him. He strives against sinking into childish appeals for sympathy from others which they cannot sincerely give. This self-pity reflects that the child is self-centered. As his knowledge of the world develops, he becomes less obviously ego-centered. This is probably because manifestations of self-interest and self-pity are socially disapproved in our culture. Therefore, signs of ego-centeredness are suppressed more in adults than in children.

Finally, the adult, in contrast to the child, is less open in his emotional manifestations. If an adult is grieved, he refrains from weeping; if angered, he controls his facial expression of anger and the impulse to attack; if afraid, he tries to assume an attitude of courage to dispel his fear.

In summary, we may say that the child in contrast with the adult is (1) less tolerant of thwarting and discomfort; (2) given to more frequent and intense outbursts of emotion; (3) more explosive and impulsive in his behavior, and with less capacity to delay his response; (4) more given to self-pity and egocentricity; (5) more open and direct in his emotional displays.

Adults differ among themselves in these respects and, as we have already discussed, the term "emotionally immature" is correctly applied to that behavior which is more a mark of childhood than adulthood.

Judgments concerning the maturity and the contrasting "immaturity" of behavior are totally relative to the culture or the environment in which the behavior occurs. This assertion has been made earlier, but it deserves further emphasis. Many things that are acceptable in our society are unacceptable in others, and, of course, the reverse is true. We can recall, for example, our previous mention of socially acceptable weeping by adult men in mid-Victorian England, and the contrast between that and what our own society dictates as proper behavior. Are there some others we can bring to mind?

We have studied the subject of "emotional maturity" at some length, but we should be aware that our study has merely scratched the surface of a subject which has filled countless volumes, entire graduate courses, and has still defied all efforts to define it in any conclusive form. At this time, there is no simple answer to the question, "What is emotional maturity?" However, we have tried to develop a general understanding of the question through defining the major terms as well as subordinate terms, establishing contrasts, and, finally, recognizing that the answer is dependent upon cultural orientation and values.

We can agree that emotionally mature persons display certain behavior patterns which can be described as being "indicators" of emotional maturity: thus an individual is emotionally mature if he understands his and other people's emotions; if he controls his emotions and learns to channel them in a "socially acceptable" manner; and, above all, if he learns to know and accept himself as a real human being.

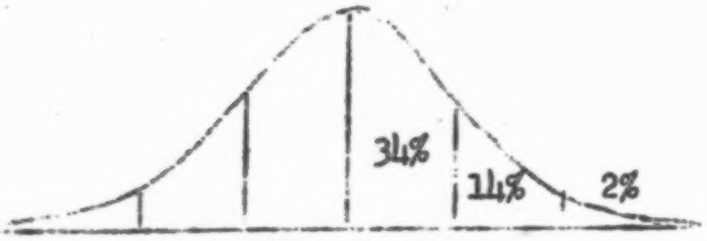
This latter quality of the mature person leads us to a review of our unit concerning "personality," and perhaps to a greater understanding of how personality is the basis for behavior.

Normal and Abnormal Behavior

Throughout this section we shall attempt to clarify some of the basic terms that are needed in studying human behavior. A proper definition of scientific terms is needed in all fields of knowledge, but it is especially important in social sciences when terms generally acquire ambiguous meanings or become vague because of erroneous use by the general public. A good example to illustrate this point is presented here.

The terms "normal" and "abnormal" when used correctly do not contain a value judgment of good or bad. This does not mean that a normal quality cannot be good or desirable. In fact most of us strive for normal behavior, but there are situations when being normal does necessarily imply being desirable. The correct use of the term "normal" should not be confused with the term "good" or "desirable."

The term "normal" is derived from the statistical term "norm" which means "at or close to the acceptable average." The following diagram illustrates the meaning of "normal" statistically.



Normal Curve

Let us suppose that we are studying the height of adult men in America. We may select a random sample representing the total adult male population, then obtain data on each subject in the sample. We can compute the average height of all subjects, and we can determine the number of subjects whose height is below or above the average. Of course, we will find that a few individuals are much too short, and a few others are much too tall, while most others will be close to the average.

We may now describe the group in the middle as the average group, or the normal group. Let us suppose that the average height, as determined by this hypothetical study is 5'10", and that 68% of the population range in height between 5'7" and 6'1". Let us also suppose that we want to select a basketball team. Would it be more desirable to look at the men whose height is normal, or would it be more desirable to look at those subjects whose height is above average or abnormal?

The above example illustrates a very significant point. Whether an individual is normal or not is determined by what the majority of the population is like, but to determine whether a quality is desirable or not we must first consider the objective or the purpose that quality may serve. Therefore, it is desirable to have a normal blood pressure, but it is not desirable to have the common cold although it is normal to do so.

Healthy Personality

Coville, Costello, and Rouke cite a list compiled by A. H. Maslow and B. Mittelman in which they present criteria for a healthy personality.[3] This list is a convenient description of a healthy and normally functioning individual. The following is a somewhat modified version of these criteria with an explanatory statement of each:

Adequate feelings of security - a general feeling of personal and social safety concerning such general psychological needs as love, affection, respect as an individual, and such physical needs as food, clothing, and shelter.

Reasonable degree of self-evaluation - a fairly realistic and comprehensive idea of our own strengths and weaknesses and our capabilities and limitations in the areas we have chosen for competition.

Realistic life goals - goals and objectives that seem to be within the realm and scope of possibility in terms of our capabilities.

Effective contact with reality - a knowledge and understanding of, and an ability to accept certain truths about life which we cannot change.

Integration and consistency of personality - a general ability to be consistent in one's general behavior whether he is with a group or alone.

Ability to learn from experience - ability to use our past experiences as a basis for our future actions.

Adequate spontaneity - the ability to show physical signs that are socially acceptable as responses to given emotional stimuli, for example: laughter, weeping, expressions of joy and elation.

Appropriate emotionality - the ability to show socially acceptable actions and reactions to given emotional stimuli where spontaneous responses are not called for, such as "tearless sorrow" or "grief."

Ability to satisfy the requirements of the group, coupled with some degree of individuality - ability to function successfully as a member of a group while at the same time being able to maintain a degree of individuality and self-sufficiency.

Adequate but unexaggerated desires, with the ability to gratify them in an approved fashion - As long as life continues, we have certain natural drives, or desires, that motivate our behavior. A healthy individual does not suppress or ignore his sexual desires, for example, but he does not exaggerate them, either. He seeks expression of his sexuality through socially acceptable channels. Also, a healthy individual seeks food to satisfy his hunger, but he does not unduly exaggerate his need for food.

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[3] Coville, Walter J., Costello, Timothy W., Rouke, Fabian L., Abnormal Psychology, New York: Barnes and Noble Inc., 1960, pp.3,4.

As a list of criteria describing a "healthy personality," to be learned or memorized, this is practically useless. As a basis for understanding and studying the so-called "normal personality," these criteria can perhaps be made meaningful. We must acknowledge that no person is expected to be a model of excellence with regard to each of these criteria. He may be somewhat deficient in one or more of these characteristics but still enjoy good overall mental health; that is to say, he will be considered normal. However, if he is deficient in too many of these characteristics or woefully deficient in one or two, he will probably be considered abnormal.

The above criteria suggest relative standards. Judgments concerning them are dependent on the common standards of the society in which they occur. In order to gain a deeper understanding of ourselves and others we ought to seek practical application of the above criteria. We may attempt to make judgments concerning our own personalities as well as those of our friends and of people we admire.

Another step that may help us understand ourselves and others is to reverse the positive criteria into their negative counterparts. For example, instead of attempting to observe "adequate feelings of security" we might attempt to observe a "noticeable lack of security."

While only a few of us are what scientists would call "qualified observers" in the field of making judgment concerning personalities, our efforts along this line could be a helpful exercise in gaining insight and understanding of ourselves and others. We all know people who seem to have a personal magnetism that draws or attracts other people. Careful examination of these people in terms of our criteria might be quite revealing. There are other people who seem to repel rather than attract. Again we might be able to gain insight through the careful use of our instrument. These notions are not new to us and perhaps for many of us the "why" of this has never been a matter of great concern. It is probably a fact, though, that the personality mixtures of individuals create the force which causes attraction, neutrality, or repulsion. Understanding this and also through careful use of our "criteria for a healthy personality," we can identify the degree to which these desirable criteria are absent or present in ourselves or others. Identifying apparent abundances or shortages in ourselves and others in any of these areas may give us a good foundation for evaluating and improving ourselves.

Normal behavior is free from serious mental disorder. This should not imply, however, that normal behavior does not include expression of strong emotions. Normal expression of such emotions as fear, anxiety and anger is certainly within the realm of socially acceptable behavior. The presence of some conflicts, from time to time, is a very normal situation.

Activation of stronger emotions is usually accompanied by some complicated bodily changes that prepare us for action. The stimuli which trigger emotions may be either internal, from within our body, or external, from our surrounding environment. Most stimuli for emotions seem to be of the external variety. For example, parents may tell a child that they are proud of him for having received good marks at school. It makes him feel good, gives him a sense of accomplishment, and reinforces his feeling of personal importance; he would probably smile, which would be a bodily change; he might even blush a little, indicating a further bodily change. In another instance, one might be frightened by an unusual noise in a dark house at night. He feels tense, afraid, uncertain about what to do. His heart beats faster, his breathing becomes more rapid, he might even begin to perspire. Other bodily changes take place. The stimulus in this instance is the unusual noise, but bodily changes are responses to the emotional condition caused by the stimulus. Still another example is the case of the baseball player who has been made angry by too much teasing over striking out in his last time at bat. Finally he has had enough and he explodes. His whole body undergoes changes. His heart beats faster; glands of internal secretion pour hormones into his blood, which actually make him stronger; his muscles become tense, ready for action. These are preparations to defend himself and keep his body from harm; but in this case he also is angry. He thinks of ways to get even. He is tense and quite apt to be unreasonable. His body and mind are ready for action, and he may be just angry enough to hit a home run. But, what if he doesn't? What if he strikes out again, or, worse, if removed for a pinch hitter?

Still another characteristic of a disturbing emotional situation is that all the while our emotional response is taking place one may be thinking such thoughts as, "What should I do next? What is happening? Can I cope with this situation? What did I do the last time this happened? How did that work out?"

In addition to the stimulus, the bodily changes, and the thoughts associated with it, our emotion itself causes us to act. We usually act in ways we have learned through our previous experiences in connection with the particular stimulus and the resulting emotion. So, we run, cry, shout and laugh because our emotions have spurred us into some kind of action, reaction, or behavior. These, then, are responses to emotions or, if one prefers, emotional responses.

The stimulus, emotional response and the resulting behavior become joined together as one when there are several repetitions of the same experience. This repetition works as a form of conditioning. It follows, then, that our responses to similar or repeated experiences take on a certain degree of predictability. An emotional response which has developed in this way is called a conditioned response. For instance, a child may be conditioned to an unreasonable fear of animals or natural phenomena by living with people whose behavior condition him to such a response. A mother, terrified of electrical storms, can condition her child to this same fear. This is called "conditioned fear."

We also find that some emotional responses are more satisfactory and acceptable in a given situation than in others. A trial and error method for finding the most satisfactory emotional response begins developing in most of us at a very early age. Many of us have had the opportunity to witness a child's behavior when he has been told it is his bedtime and he wants to take part in the household activities a little longer. The child who cries when he is told he has to go to bed and gets to stay up longer will quickly learn that crying works. If he doesn't get his way, he will soon learn that crying will not help him achieve his goal.

Frustration and Conflict

Many situations in life block our needs. Of particular interest to psychologists are two types of situations. The first type results in frustration and the second in conflict. Conflict arises when two or more competitive needs or drives are present but cannot be satisfied at the same time. Frustration on the other hand is caused by blocking or thwarting a drive by some external circumstance or by an act of some other person.

Both frustration and conflict may lead to anxiety. Frustration often leads to aggression, and conflict sometimes leads to neurosis. Because the concept of frustration is rather simple, we will present an analysis of conflict in this section.

There are three types of conflict: (1) Those conflicts in which the individual must choose between two attractive goals. A young woman may have to choose between marriage and an exciting career, for example. (2) Conflicts in which the individual must choose between two evils, such as doing distasteful work or having no money. (3) Conflicts in which the individual must decide whether to move toward a pleasurable goal the attainment of which involves painful consequences. For example, a boy may seek his friends' admiration through rough games, but he is aware he may be injured.

Psychologists have labelled these three types of conflict as approach-approach, avoidance-avoidance, and approach-avoidance. The terms approach and avoidance are used to describe opposing drives that bring satisfaction or pain to the individual.

Adjustment

The manner in which we resolve our conflict may be used as a measure of our adjustment. We have defined adjustment as the process by which an individual adapts himself to meet his needs in various situations. Since life always brings new situations, the process of adjustment is a continuous one, involving a relationship between an organism and its environment.

It is worth pointing out that adjustment can be physiological or psychological. The human body, for example, normally maintains a constant temperature regardless of varying environmental conditions. In extreme hot conditions, sweat secretion acts as air conditioning, and in extreme cold surroundings, the body shivers and this helps generate extra heat. Another example is found in observing what happens to our eyes as we move from a bright place to a dark one. Usually, the eyes adjust to the intensity of light and allow enough light to enter through the lenses to the sensitive nerves that carry the image to the brain. This phenomenon of physiological adjustment is called homeostasis.

Adjustment of a person to his external social environment is similar to homeostasis. The only difference is that homeostasis is controlled by physiological mechanisms, while adjustment is controlled by psychological mechanisms. Further, there are various ways in which an individual may adjust to changes in his social environment. A student receiving poor marks in school may adjust to the situation by seeking advice from his instructor or by working harder, or he may adjust by withdrawing from the situation where he is facing failure, or by dropping out of school.

The above example leads us to a discussion of adjustment in evaluative terms. Could adjustment be good or bad, or should we accept and approve of any adjustment a person may make?

Scientifically, we should not attach a value or a moral judgment to adjustment. However, mental practitioners such as psychiatrists are involved in helping people make adjustments that are acceptable by society. In other words, they help people make "good" or desirable adjustments.

Underlying the process of adjustment are the dynamic events involved in frustration and conflict. Because they are unpleasant, tension-loaded states, frustrations and conflicts motivate the individual toward activity which will eliminate or reduce discomfort caused by such disturbances. This activity, which we have already identified as the adjustment process may be experienced either consciously or unconsciously. When conflict is prolonged or severe, one may experience a threat to his ego. In other words his opinion of himself and his self-esteem may be threatened. This often causes anxiety. The combination of stress and anxiety will drive the person toward the basic reactions of "fight" or "flight." The degree to which these reactions are brought into play depends upon the intensity of the conflict and how well our adjustment processes have been conditioned toward socially accepted patterns. The specific form these reactions take will be determined by the individual's previous learning and life experiences, particularly as they have influenced his attitude toward society, and to a greater or lesser degree, influenced his desire for social acceptance. As the individual experiences and accepts the patterns and demands of society, he tends to control, conceal, or modify his reactions. The more extreme expressions of the basic reactions of "fight" or "flight" are found in immature adults or small children.

The "fight" reaction is a destructive physical act directed at the person or object that has caused our frustration. This is the primitive or natural response. However, as we learn to understand the social disapproval attached to such behavior and the danger of punishment and counter-attack that must follow, we seek more devious methods of fighting back. Verbal aggression such as angry name-calling, barbed wit, argument, or criticism, is often used as substitute behavior for fighting. In some instances the person may find it impossible to express any aggression toward the frustrating person and he may try to direct these feelings at other persons, usually those who cannot retaliate effectively or who are not members of his own group. We frequently see examples of displacement of aggression: adult to child, husband to wife, teacher to student, employer to employee and the reverse of these. Another example of displaced aggression could be the hostility directed toward minority groups, expressed as discrimination based on prejudice.

In extreme cases, the efforts to suppress or cover up aggressive impulses may cause them to become completely inhibited. Such blocked aggression and the accompanying need to reduce the feelings of guilt arouse patterns of self-directed aggression. Suicides and even some fatal accidents have sometimes been interpreted as having developed through extreme patterns of self-directed aggression.

The reactions of "fight" or "flight" constitute the acting-out of responses to frustration. The phrase "acting-out" implies that these are conscious attempts at adjustment and should be differentiated from defense mechanisms which are indirect and unconscious efforts at adjustment.

The "flight" reaction often manifests itself in conscious or unconscious efforts to escape from an unpleasant situation. Examples of escape mechanisms are daydreaming, regression, and hysteria. While some forms of escape are indicative of severe mental disorders, common types of escape are normal and healthy. A child ridiculed by some other children may defend himself by withdrawing from their group, and this is a healthy form of adjustment. However, if this child withdraws from any contact with children, then we may become concerned that his adjustment to the situation is not healthy. The same may be said about fantasies and daydreaming.

Most of the frustrations and conflicts experienced in day-to-day living can be resolved on the conscious level. The most common attempts at adjustment in the face of frustration or conflict take the form of increasing the effort to overcome the obstacle, lowering or changing the goal, or realistically reappraising the frustrating or conflicting situation.

Conflicts or frustrations which are so deeply rooted that they cannot be resolved on the conscious level lead to the development of unconscious adjustive efforts. These are called "defense mechanisms." In some instances conscious attempts at adjustment may resemble the pattern of a defense mechanism. The difference lies in the person's insight or awareness. A true defense mechanism always functions unconsciously.

All people use these self-deceptive measures to some extent. In this way they are unconsciously trying to maintain their self-esteem (ego) and soften the impact of failure, deprivation, or guilt. It is wrong to assume that defense mechanisms mean an abnormal personality structure. Actually, their use often results in gains for a person in his adjustment efforts. On the other hand, too much dependence upon defense mechanisms as a means of resolving frustration or conflict may indicate abnormal adjustive behavior.

At this point, let's examine some of the various defense mechanisms based on current thought generally agreed upon by prominent authorities in the field.

Compensation. This term refers to one's devotion to a given pursuit with increased vigor in an attempt to make up for some feeling of real or imagined inadequacy. The compensation may be direct or indirect.

Direct Compensation. This term refers to the generation of an intense desire to succeed in an area in which one has experienced failure or inferiority. A classic example is the effort of Demosthenes, the ancient Greek scholar, to become a great orator because of his childhood speech disabilities; the very presence of this frustrating handicap was the driving force which enabled him to work with the intensity necessary to overcome it.

Indirect Compensation. This term refers to the effort to find success in one field when failure has been experienced in another. This can be seen in the vigorous efforts by some students who have failed to make their mark in academic circles to excel in athletics or in social activities.

Over-Compensation. This term refers to direction of a person's compensatory efforts toward a single area of failure or inadequacy to such an extent that his general adjustment to life is disturbed. In other words, his concern is so deep over one area of his adjustment that he loses sight of all others. If he finds adjustment in these other areas of life difficult, then he is said to have "over-compensated" even though he might enjoy great success from his efforts in the isolated area of his concern.

Conversion. This term refers to the mechanism through which frustrations and conflicts gain expression through motor, sensory, or somatic ailments. The resulting disability often represents both escape from painful or ego-threatening experiences and gain through ailment. "Shell shock" reactions of soldiers in wartime have provided some excellent illustrations of the conversion defense. As a result of having been near an exploding shell, some of these men developed purely psychological paralysis, blindness, etc., in this way escaping further anxiety-producing combat and also being rewarded with sympathy and medical care.

Denial. This term refers to the avoidance of painful or anxiety-producing reality by unconsciously denying that it exists. In an extreme form this may result in a complete loss of contact with surrounding reality. An extreme case would be the denial, despite conclusive evidence, that some loved one has died. More common are denials, in the face of evidence to the contrary, of a loved one's having unpleasant traits such as stubbornness, cruelty, or dishonesty.

Displacement. This term refers to the process through which pent-up emotions are redirected toward ideas, objects or persons other than the primary source of frustration. A frustrated employee may not be able to express his aggression against his employer, but he may be unnecessarily aggressive against his wife. Or, a child may be frustrated at his inability to play a game, so he starts kicking a stone. Displacement may also be evidenced in changing the channel of expression for the emotion; for instance, physical aggression may be inhibited but expressed verbally.

Disassociation. This term refers to the mechanism through which a group of mental processes are isolated from consciousness and operate automatically and independently. This often results in the splitting away of certain mental content from the main personality. Amnesia would be extreme disassociation. Other examples might be development of split or multiple personalities and sleepwalking.

Fantasy. This term refers to daydreaming or some form of imaginative activity which provides escape from reality with satisfaction obtained through imagined achievements or martyrdom. A certain amount of daydreaming, especially in the earlier years of life, must be regarded as normal. As a preparation for creativity, fantasy is not only desirable but essential. But fantasy is dangerous and can be a disabling mechanism if it is consistently preferred to reality and is used as a method of problem-solving. In extreme forms of fantasy the individual cannot differentiate fact from fantasy.

Identification. This term refers to a means of improving one's opinion of himself by copying observed behavior patterns of another person. This occurs either in fantasy or in actual behavior. Used moderately, identification may be both helpful and stimulating and can often lead to superior achievement. Used to excess, it may deny the person fulfillment of his own needs. The popularity of movies and spectator sports as diversions is largely due to the satisfaction obtained through identification.

Negativism. This term refers to the process of resisting demands upon the individual. It manifests itself both actively and passively. The process is active when the person does the opposite of what he knows he should do, and passive when he avoids doing what is expected.

Projection. This term refers to the individual's protection of himself from awareness of his own undesirable traits by attributing them to others. In its function of self-deception this maneuver is particularly injurious to personality adjustment, since it tends to destroy insight. There is no constructive use of projection, and its overuse is often dangerous, for it can cause suspiciousness and therefore can be harmful to effective interpersonal relations.

Rationalization. This term refers to the mechanism through which a person justifies inconsistent or undesirable behavior and beliefs by providing acceptable explanations for them. For instance, "sour grapes" implies that a goal we have tried and failed to achieve is not really worth trying for; and the "sweet lemon" finds desirable qualities in that which was not truly wanted. Rationalization operates strictly on the unconscious level and should be differentiated from the conscious "alibi."

Reaction Formation. This term refers to the process whereby urges that are not acceptable are repressed and in their stead opposite attitudes are expressed forcefully. Overemphasis of sincerity or willingness to help may frequently mean the opposite. This is closely related to repression which is the process of complete exclusion from consciousness of disturbing impulses and feelings that arouse a sense of guilt or anxiety. Repression is essential for the existence and operation of all other defense mechanisms. It should be distinguished from "suppression," which is the conscious control of unacceptable impulses, feelings and experiences.

Regression. This term refers to the mechanism whereby an individual returns to an earlier and less mature level of adaptation. Mild regression is seen in the return of an older child to babyish mannerisms upon the birth of a sibling.

Sublimation. This term refers to the process by which unconscious and unacceptable desires are channeled into activities that have strong social approval. The unacceptable desires are usually sexual in nature but they may be expressed as creative efforts in music, art, and literature. Other areas of life that provide avenues for sublimation are social welfare work, teaching, and religious life, or in fact any other kind of work.

In summary, the function of a defense mechanism is to protect the ego in order for the individual to maintain a state of equilibrium. When the stress caused by frustration and conflict is too powerful for the personality to resist, the defenses are weakened and the personality begins to disintegrate. This process is called decompensation: the individual first attempts to use other defensive techniques. For example, he may pass from superficial rationalization to severe projection. Continual decompensation will probably produce a panic state of anxiety as the individual's defense mechanisms break down.

All of the adjustment mechanisms discussed here, it should be remembered, are employed because of some kind of change in the relationship between the organism (person) and his environment. The process of adjustment is never ending as each adjustment creates another change in the relationship and therefore the need for further adjustment.

When our unconscious defense mechanisms are thus not capable of offsetting anxiety, the problem becomes a conscious one. This can have the effect of uncovering the reality that the unconscious has been concealing from us. Few people can stand to face life without using defense mechanisms. Thus the breakdown of defense mechanisms in extreme cases may result in psychosis.

However, knowledge of common defense mechanisms helps us re-examine our own behavior. Are we aware of the defenses we employ? Do we escape to fantasies and daydreaming every time we have a problem? Do we misplace our aggression and attack an innocent child or a dog? A well-adjusted individual employs defense techniques only to a moderate degree.

Causes of Anxiety

Anxiety is an emotional state marked by helplessness and mixed with fear of and hope in the future. It is usually a result of conflict and lack of confidence in one's ability to cope with problems. Anxiety may be felt when an individual anticipates pain or failure.

All people experience a certain degree of anxiety. Some people, however, seem to be anxiety-ridden most of the time. If we are to use a measure to evaluate adjustment, anxiety may be the best measure.

Lack of adjustment produces anxiety. A child who is dependent on his parents for his very existence, but who is rejected by them may develop anxiety because he may feel both attachment and hostility and he may not be able to resolve this conflict.

Many clinical studies on anxiety have provided much information on its causes. Two primary causes are presented here:

a. Childhood experiences: Anxiety has been observed in children and adults who come from families that either reject them or over-dominate them. In the case of the cold rejecting parents the child continues to struggle between attachment to his parents and hostility against them. In the second case where a child is dominated by his parents, he is usually over-protected. He feels helpless and incapable, and perceives the world as a dangerous and cruel place. Let us think of a child who is brought up by parents who do not allow him to do much for himself: "do not play so hard or you will get sick," or "do not play with your friends, they may hurt you." This child will feel weak and incapable. He feels helpless and insecure.

b. Threatening life situations: Anxiety is often experienced by well-adjusted individuals. The causes for anxiety are not basically attributed to the individual, but to the situation. Sometimes severe conflicts, or inability to find immediate and easy solutions to problems cause anxiety. However, it must be remembered that some people are better equipped to cope with problems than others. A certain problem may generate a great deal of anxiety to a certain individual while it is solved very easily by another. The difference between the two may be found in their ability to cope with the problem and find a satisfactory solution.

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UNIT THREE

HUMAN REPRODUCTION, GROWTH AND DEVELOPMENT

Introduction

Of all living functions, reproduction happens to be among the most noticeable to the casual human observer. It is the drama of "now there is one, then there are two" that drives us to learn more of this process. One's interest does not stop with the advent of the newborn, but is then spurred on by the wonder of what this individual will develop into.

The Patterns of Reproduction

Reproduction is a process by which a living species produces new individuals. Two main patterns of reproduction exist: sexual and asexual.

Sexual reproduction is any method of producing a new individual that involves the union (fusion) of two cells (egg and sperm) each of which comes from a different source. This pattern may be accomplished by (1) the fusion of the egg cell (ovum), produced by a female, with the sperm cell, produced by a male (man and most other familiar organisms display this process); or (2) the fusion of ovum and sperm produced by a single individual. These individuals are called hermaphroditic. The cell which results from the union of an ovum and sperm is called the zygote. It is the zygote which will develop into an adult.

Asexual reproduction is any method of producing a new individual that does not involve the union (fusion) of two cells. One common example of this pattern of reproduction is fission, the division of one cell which results in two new individuals. Figure 1 is an illustration of the two patterns of reproduction discussed above.

The Human Reproductive System

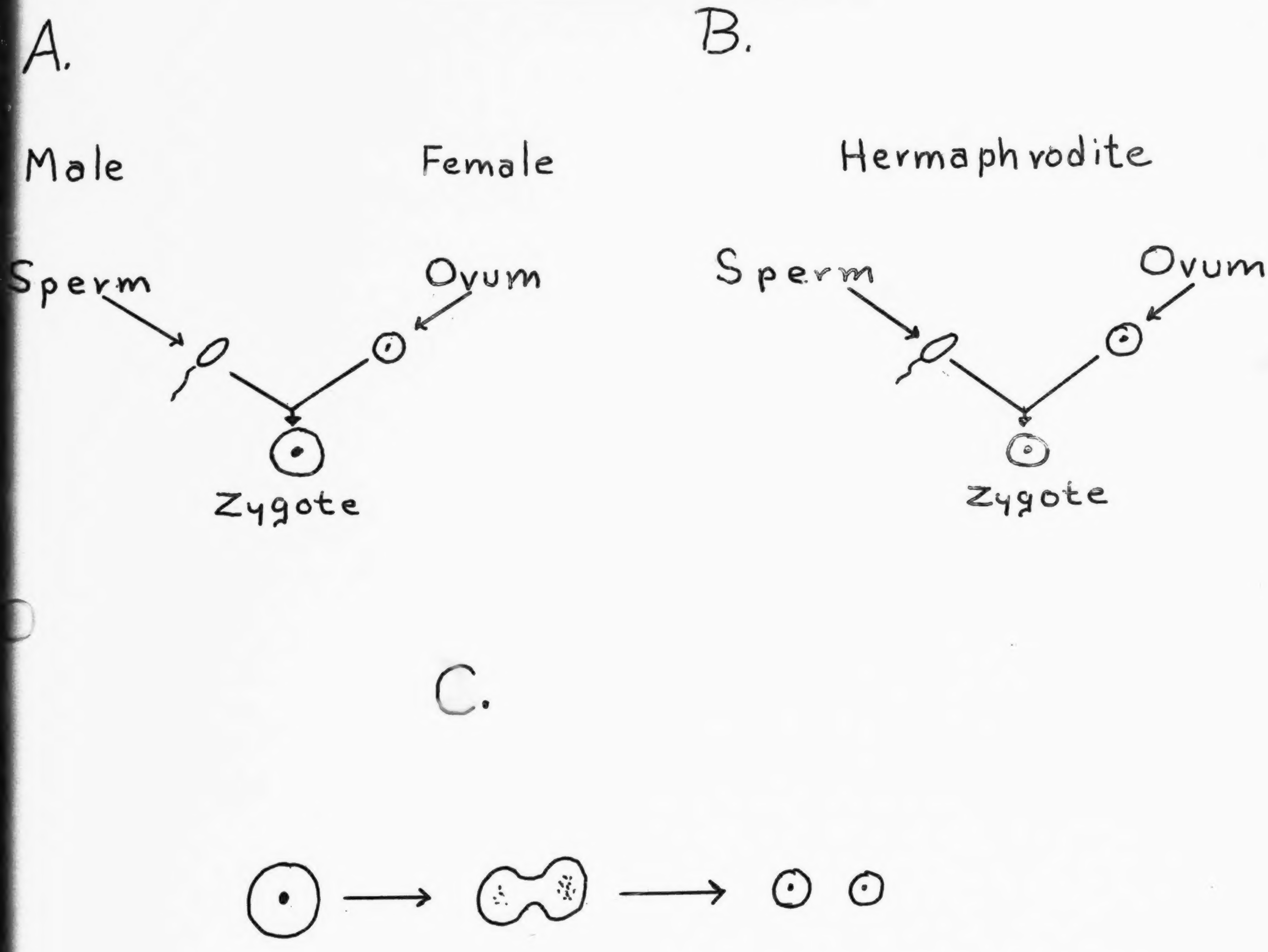
In males, the organs which produce the sperm cells are the testes. The two testes are located in an out-pocketing of the body wall called the scrotum. Hundreds of millions of sperm cells are produced in small, highly coiled tubes in each of the two testis. Two long tubes (the sperm ducts), one from each testicle, carry the sperm cells from the scrotum to the junction of the urethra. The urethra is the tube which extends from the urinary bladder through the length of the penis.

Connected to the sperm duct are the prostrate gland and the seminal vesicles. These glands produce the thick, milk-colored fluid (seminal fluid) which aids in the transport of the sperm and maintains their well-being. The combination of sperm and seminal fluid is called semen.

The penis usually hangs down limp and soft at the front base of the abdomen. At certain times, blood rushes into the special spongy tissues of

FIGURE 1

SEXUAL AND ASEXUAL REPRODUCTION


A.
B.
Male
Female
Hermaphrodite
Sperm
Ovum
Sperm
Ovum
Zygote
Zygote
C.

A. Sexual reproduction separately sexed.

B. Sexual reproduction hermaphrodism.

C. Asexual reproduction by fission.

FIGURE 2

MALE REPRODUCTIVE SYSTEM

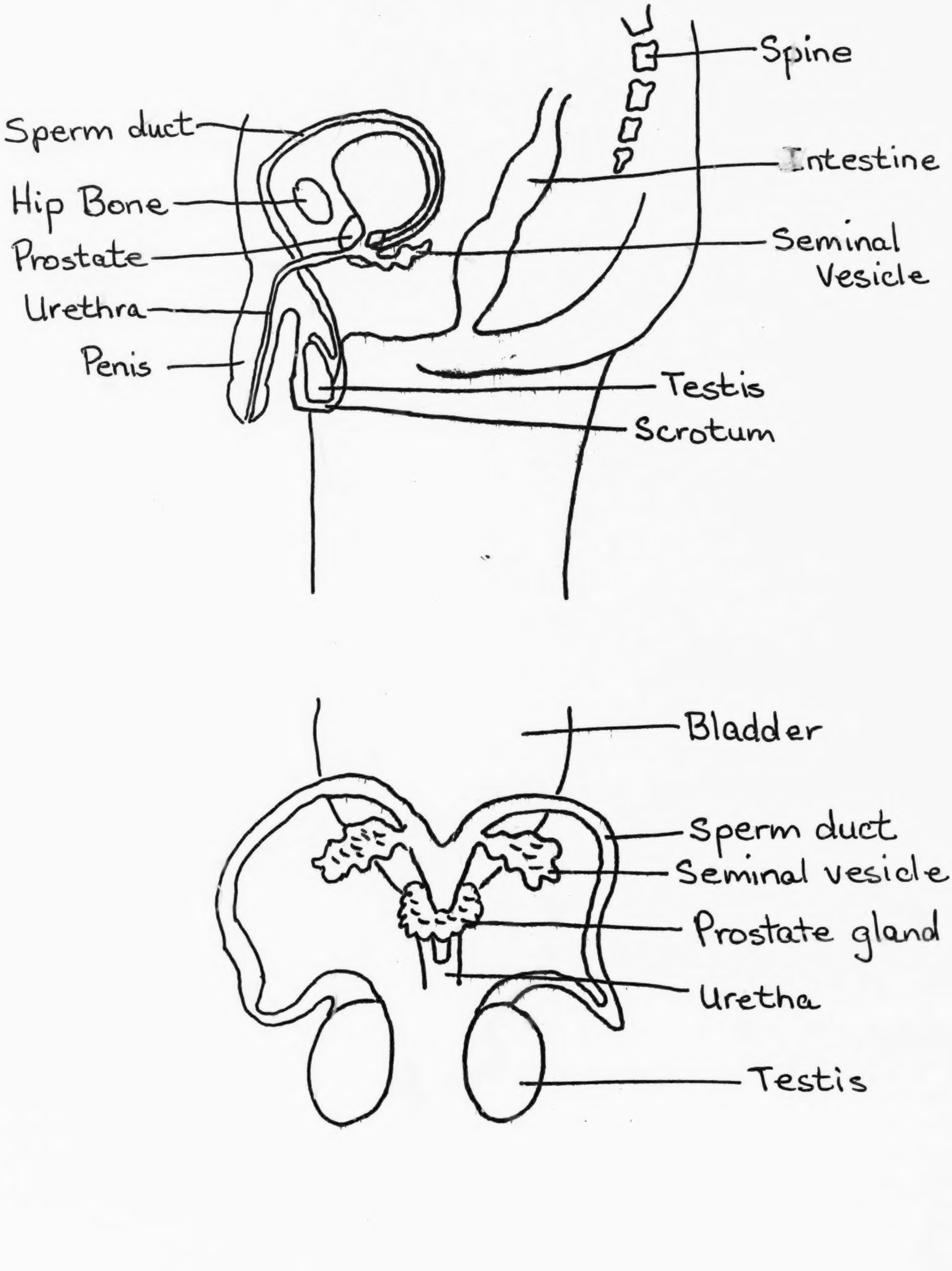
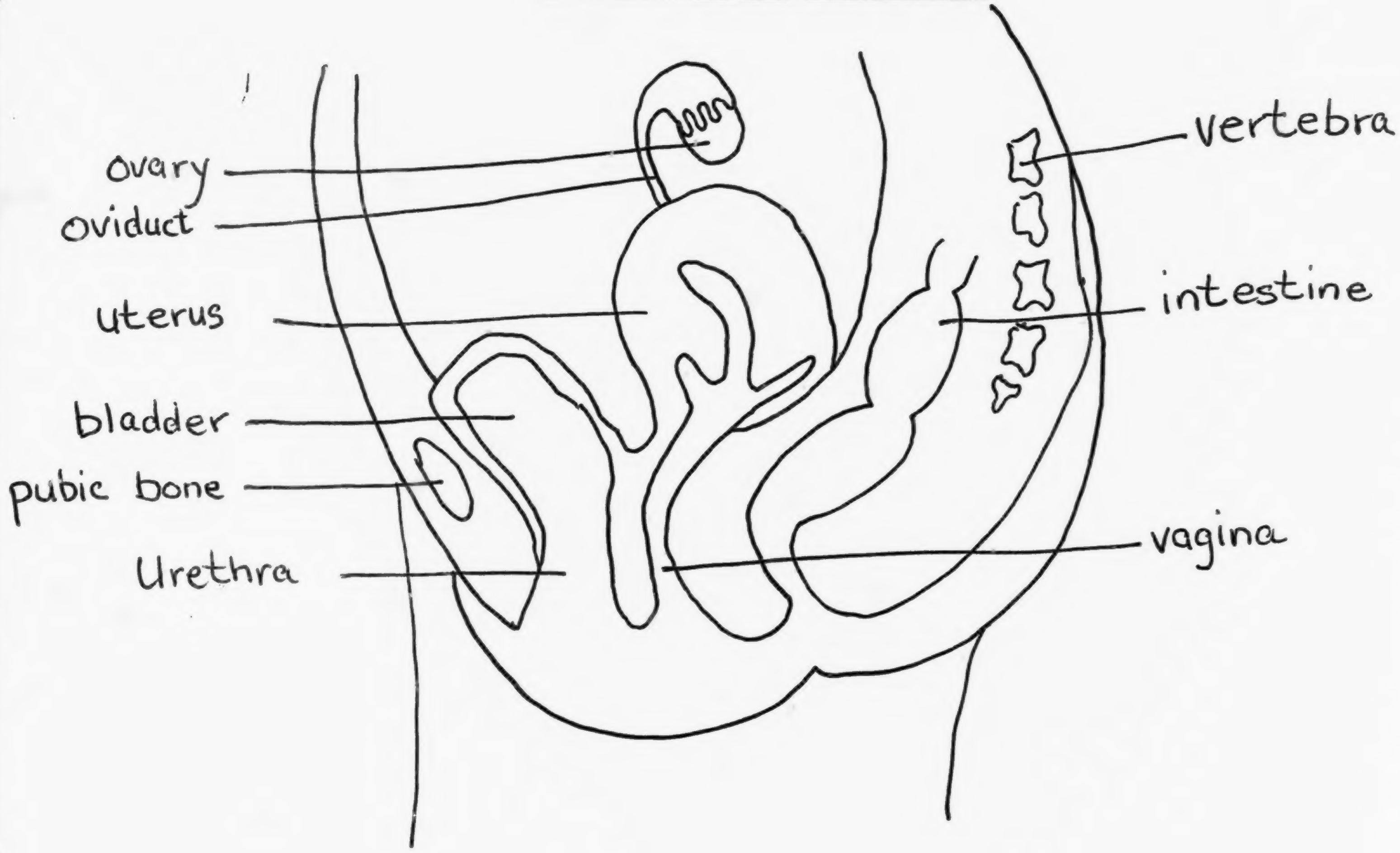
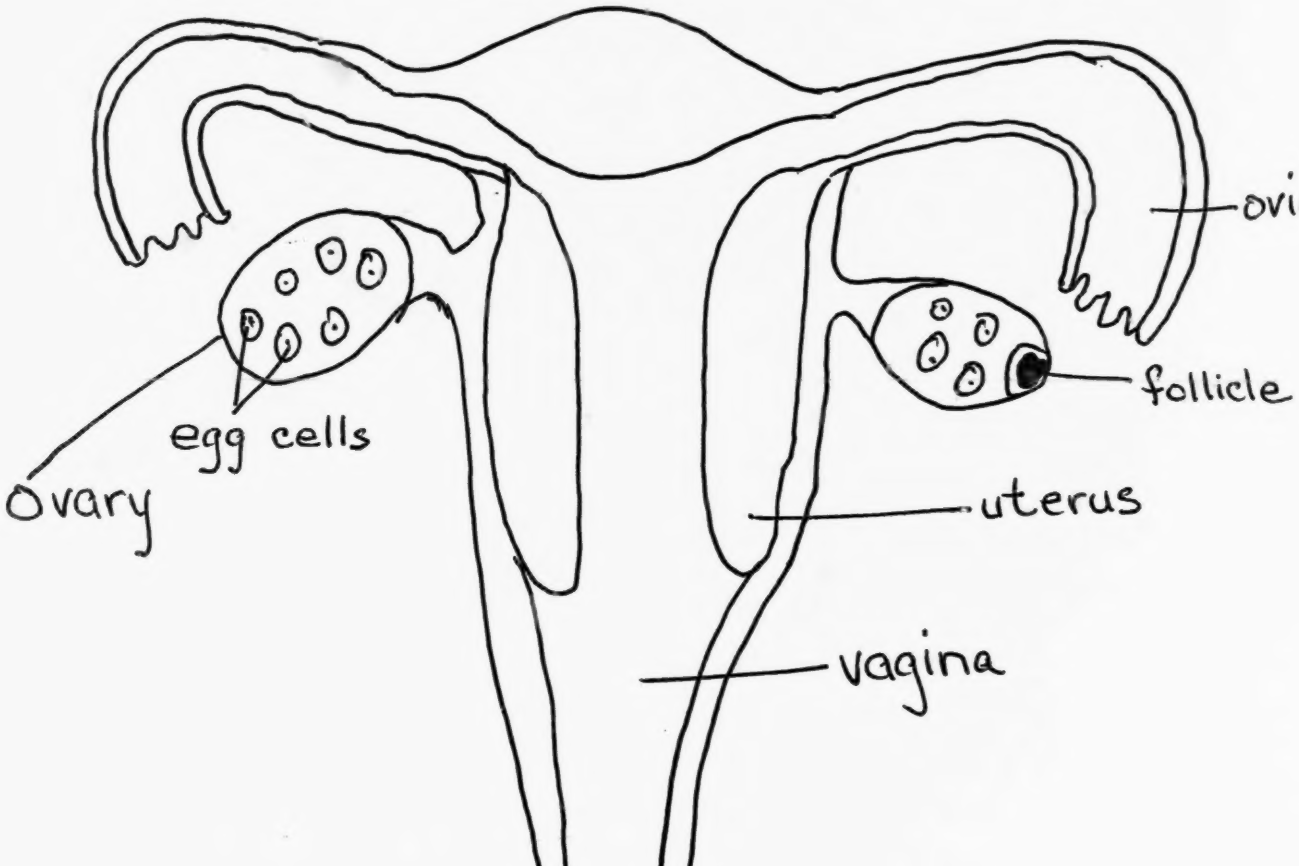

Spine
Sperm duct
Intestine
Hip Bone
Prostate
Seminal Vesicle
Urethra
Penis
Testis
Scrotum
Bladder
Sperm duct
Seminal vesicle
Prostate gland
Uretha
Testis

FIGURE 3

FEMALE REPRODUCTIVE SYSTEM


ovary
oviduct
uterus
bladder
pubic bone
Urethra
vertebra
intestine
vagina

SIDE VIEW


oviduct
follicle
egg cells
Ovary
uterus
vagina

FRONT VIEW

the penis. These tissues swell so that the penis becomes firm and extends from the body. This state is called an erection.

In females, the ova (eggs) are produced in two ovaries which are located deep in the body. Each ovary is about the size of a walnut. Each ovum develops in a tiny sack-like structure in the ovary called the follicle. As the egg grows, the follicle becomes larger and fills with fluid. When the egg is mature, the follicle ruptures and the tiny egg is carried out with the fluid. This release of the egg is called ovulation. After ovulation, the ruptured follicle develops into a new structure called the corpus luteum. As will be pointed out later, the corpus luteum plays an important role in controlling the reproductive process.

Normally, after the egg leaves the ovary, it is drawn into the widened funnel of an oviduct. The oviduct is a tube extending from the neighborhood of an ovary to the muscular, thick-walled uterus. If sperm cells have been deposited in the opening of the female reproductive tract, the vagina, they swim at random through the uterus and into the oviduct. It is in the oviduct that a sperm cell meets the egg and fertilization takes place. Fertilization is the union of egg and sperm.

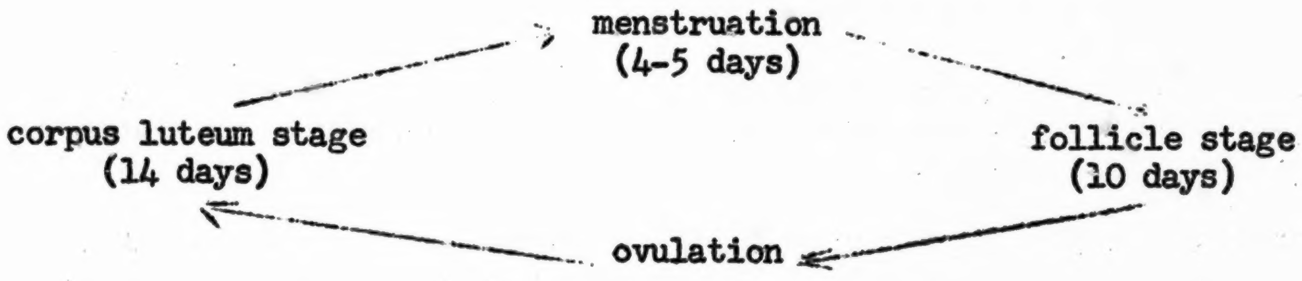
The fertilized egg (zygote) begins to develop as it continues on through the oviduct to the uterus. When the developing zygote reaches the uterus, it is a mass of cells. This mass of cells (the embryo) becomes implanted in the uterine wall which has been prepared to receive the embryo, nourish it, and dispose of its waste materials. The preparation of the uterus occurs as the egg is developing in the follicle of the ovary.

The Human Reproductive Cycle

The female reproductive system functions in cycles. A cycle being defined as a succession of events repeated regularly within a given period of time. In humans it is called the menstrual cycle and takes about a month for completion. The cycle can be divided into four stages. The following diagram shows each successive stage and the approximate time involved:

Figure 4

Four States of the Menstrual Cycle



Menstruation is the breakdown and discharge of tissues and blood escaping from torn vessels at the uterus. This cellular debris is expelled through the vagina to the outside over a period of a few days. Total blood loss is approximately one ounce or less. During this stage the body of the female undergoes menstrual pains commonly known as cramps. The medical term for this phenomenon is dysmenorrhea.

The follicle stage is the period between the end of menstruation and ovulation. During the follicle stage, a single egg develops in the follicle of the ovary. As the follicle matures, it secretes a chemical substance called estrogen. Estrogen is a hormone which stimulates an increase of soft tissue on the inner lining of the uterus in preparation for an embryo.

Ovulation, the releasing of the mature egg from the follicle, occurs between two periods of menstruation, usually about 14 days before the onset of menstruation. Since menstrual cycles vary in length of time, and since ovulation usually occurs 14 days before menstruation, it is sometimes difficult to predict when ovulation will occur.

After ovulation, the ruptured follicle is formed into the corpus luteum. During this corpus luteum stage, the corpus luteum secretes the hormone progesterone. Progesterone stimulates further development of the uterus by increasing its blood vessel development and spongy tissue layer. This completes its preparation for embryo implantation. During this time, the egg is passing through the oviduct where the fertilization may take place. If an embryo is formed, its arrival at the uterus coincides with the completion of uterine preparation. Figure 5 is an illustration of the above.

If fertilization and attachment of the embryo does not occur, the corpus luteum disintegrates, progesterone secretion stops, and menstruation begins. Menstruation seems to occur as a result of progesterone decrease. After menstruation, the cycle begins again and continues every month until the menopause, the time when the menstrual cycle stops. Menopause generally occurs when the female is in her forties or fifties.

The obvious question that follows is that if the follicle and corpus luteum produce hormones to regulate the uterus, what then regulates the follicle and corpus luteum?

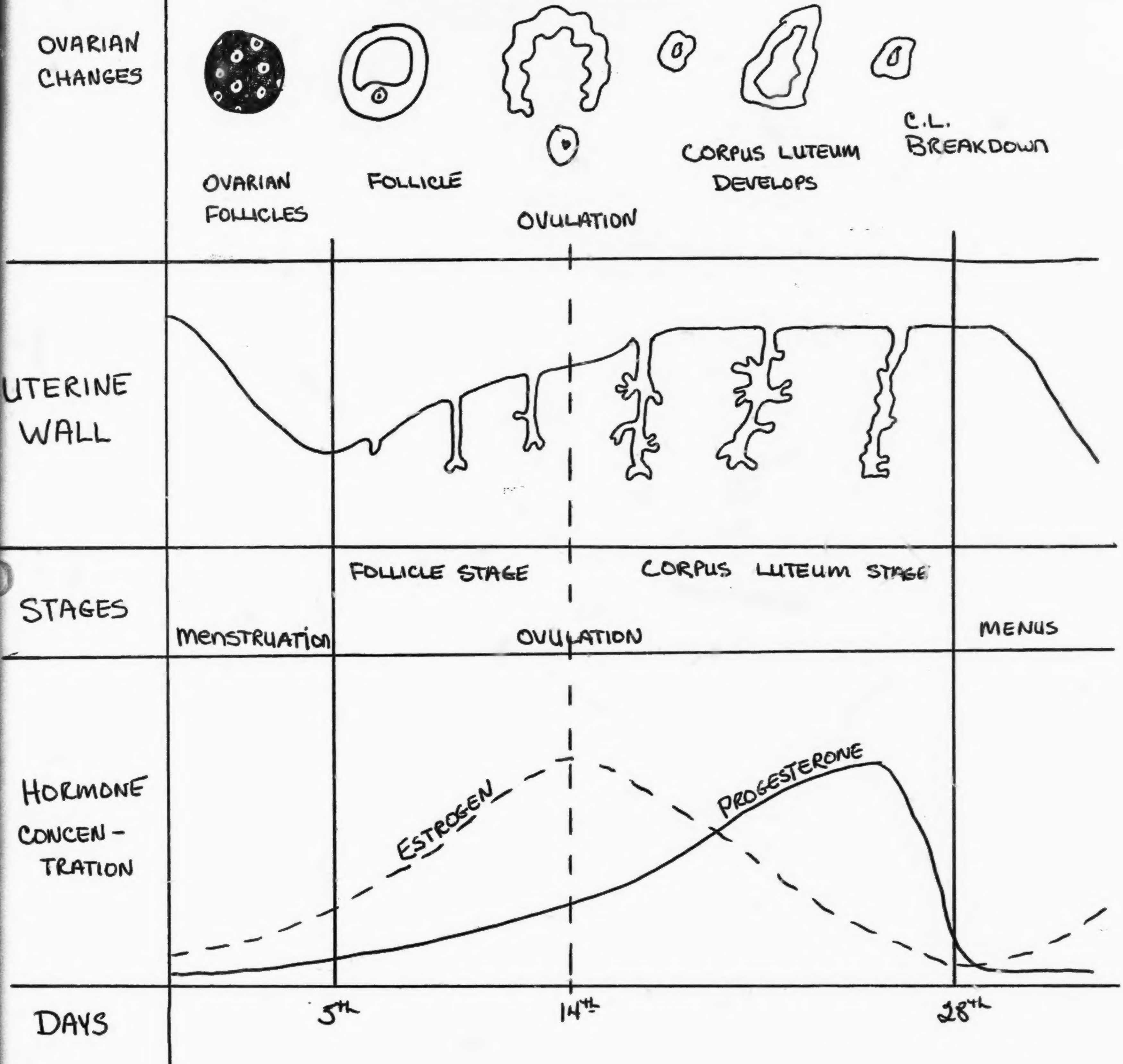
At the base of the brain is a small gland called the pituitary. It secretes three hormones which affect the activity of the ovary. The hormone produced by the pituitary which stimulates the development of the follicle is the follicle-stimulating hormone, commonly abbreviated FSH. A second pituitary hormone is called the luteinizing hormone or LH. It causes ovulation of a well-developed follicle and then the conversion of the follicle to a corpus luterum. It is only when the FSH and LH are available together that the follicle secretes the estrogen which is necessary for uterine development. Thus with certain concentrations of FSH and LH maximum follicle development, secretion of estrogen, ovulation takes place.

The third pituitary hormone is called the luteotropic hormone or LTH. As its concentration increases, progesterone production is stimulated and further uterine development takes place.

The secretions of the pituitary gland are regulated by the concentration of the hormones secreted by the ovary. The increase of progesterone concentration causes a decrease of LTH and LH secretion by the pituitary. The decrease in LTH and LH causes the degeneration of the corpus luteum which in turn abruptly stops producing progesterone. The lack of progesterone brings on menstruation. Estrogen concentration also influences the pituitary by causing a decrease of FSH. Thus it is noteworthy how the pituitary and ovary

FIGURE 5

THE MENSTRUAL CYCLE


OVARIAN CHANGES
OVARIAN FOLLICLES
FOLLICLE
OVULATION
CORPUS LUTEUM DEVELOPS
C.L. BREAKDOWN
UTERINE WALL
STAGES
FOLLICLE STAGE
CORPUS LUTEUM STAGE
MENSTRUATION
OVULATION
MENUS
HORMONE CONCENTRATION
ESTROGEN
PROGESTERONE
DAYS
5th
14th
28th

Top: Events that take place in the ovary.

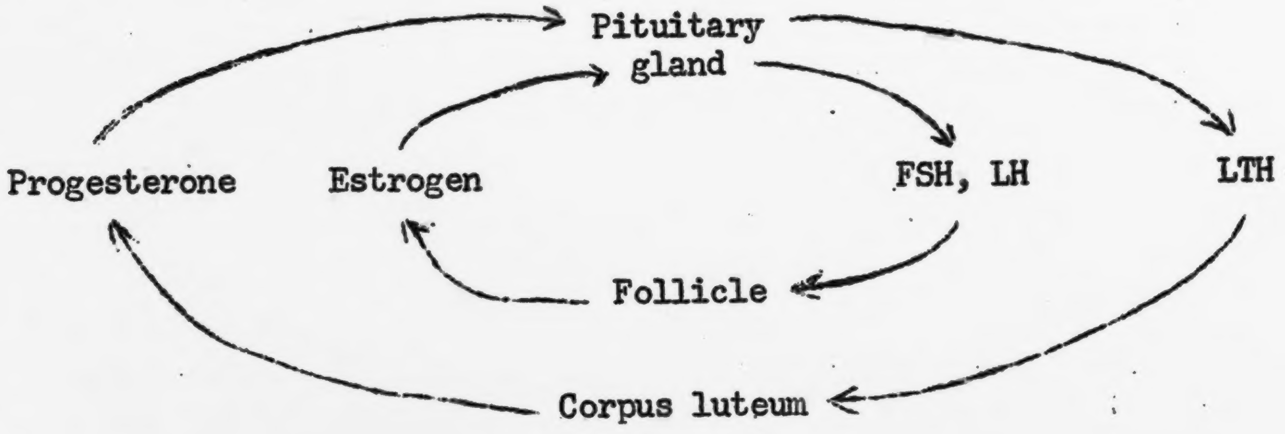
Middle: Development of uterine wall with soft tissue and blood vessels.

Bottom: Graph showing concentration of the sex hormones.

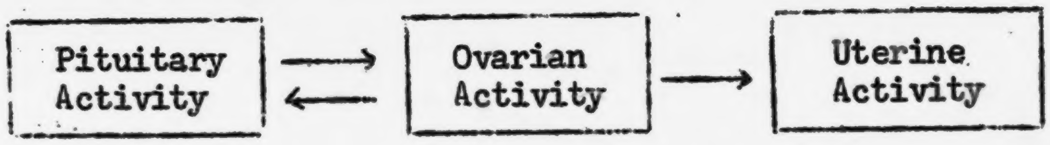
are each influenced by the secretions of the other. This sort of control is known as feedback control.

Figure 6

Feedback Control of Pituitary and Ovary



A summary of the interaction of pituitary and ovary and their effect on the uterus can be shown in the following diagram.



Unlike sex cell production in females, males produce sperm continuously and in great number. Pituitary control is present in the male and is exercised mainly through LH. The function of FSH and LTH in males is still obscure. Pituitary LH stimulates the testes to produce testosterone. The testosterone in turn causes sperm production in the coiled tubes of the testes and also controls the pituitary secretion of LH. Again we see the feedback affect of one gland on another.

Fertilization

In order for fertilization to take place, the sperm cell must not only come in contact with the egg cell, but must actually unite with it to form a single cell - the zygote. This union of sex cells is achieved after sperm have been deposited in the vagina during the act of sexual intercourse. Sexual intercourse is also referred to as copulation and more often as coitus.

Coitus takes place when the male's erect penis is inserted into the vagina. The activity which follows results in ejaculation of sperm into the female reproductive tract. Many millions of sperm are ejaculated at one time.

The sperm cells which are deposited into the vagina usually live for a few hours, except in cases where intercourse takes place before ovulation where the sperm live for two, three, or four days. The egg, on the other hand, is receptive to sperm for only a few hours. This limits the time of fertilization to the period of ovulation, although fertilization can result from sexual intercourse that takes place three or four days before ovulation. The exact time of ovulation is usually not known.

Normally, the human female ovulates one egg at a time which, if fertilized, develops into a single offspring. Occasionally, two eggs may be released by the ovary each of which could be fertilized and the result being twins. Twins resulting from the fertilization of two separate eggs by two separate sperm are called fraternal.

Identical twins develop from a single fertilized egg, that is one egg and one sperm. In some cases, the zygote or the early embryo will separate into two parts and each part will develop into a complete individual. Because both offspring are a result of the same zygote, they will be of the same sex and have the same genetic inheritance.

Abnormalities such as Siamese twins result from incomplete division or separation of cells during early embryonic development.

Gestation

The period of time during which the offspring is retained and nourished within the uterus is called gestation. In humans, this 280 day period (nine months) is the time during which the zygote develops from a single cell to the well formed individual we see at birth.

The development of the individual begins immediately after fertilization. The zygote takes three to four days to travel through the oviduct to the uterus, arriving in the uterus as a spherical cluster of several dozen cells which implants itself into the soft tissue and continues its development.

In about a week the now larger cluster of cells begins to differentiate into a series of membranes which surround the embryo and into specialized body tissues. One of the membranes is the chorion. It surrounds the embryo and all other membranes. During development, tiny finger-like projections grow from the outer-surface of the chorion into the soft tissue of the uterus. These projections form the placenta. In the placenta, the blood system of the mother and embryo lie very close together. So close, that the exchange of oxygen, carbon dioxide, nutrients, and wastes between mother and embryo take place.

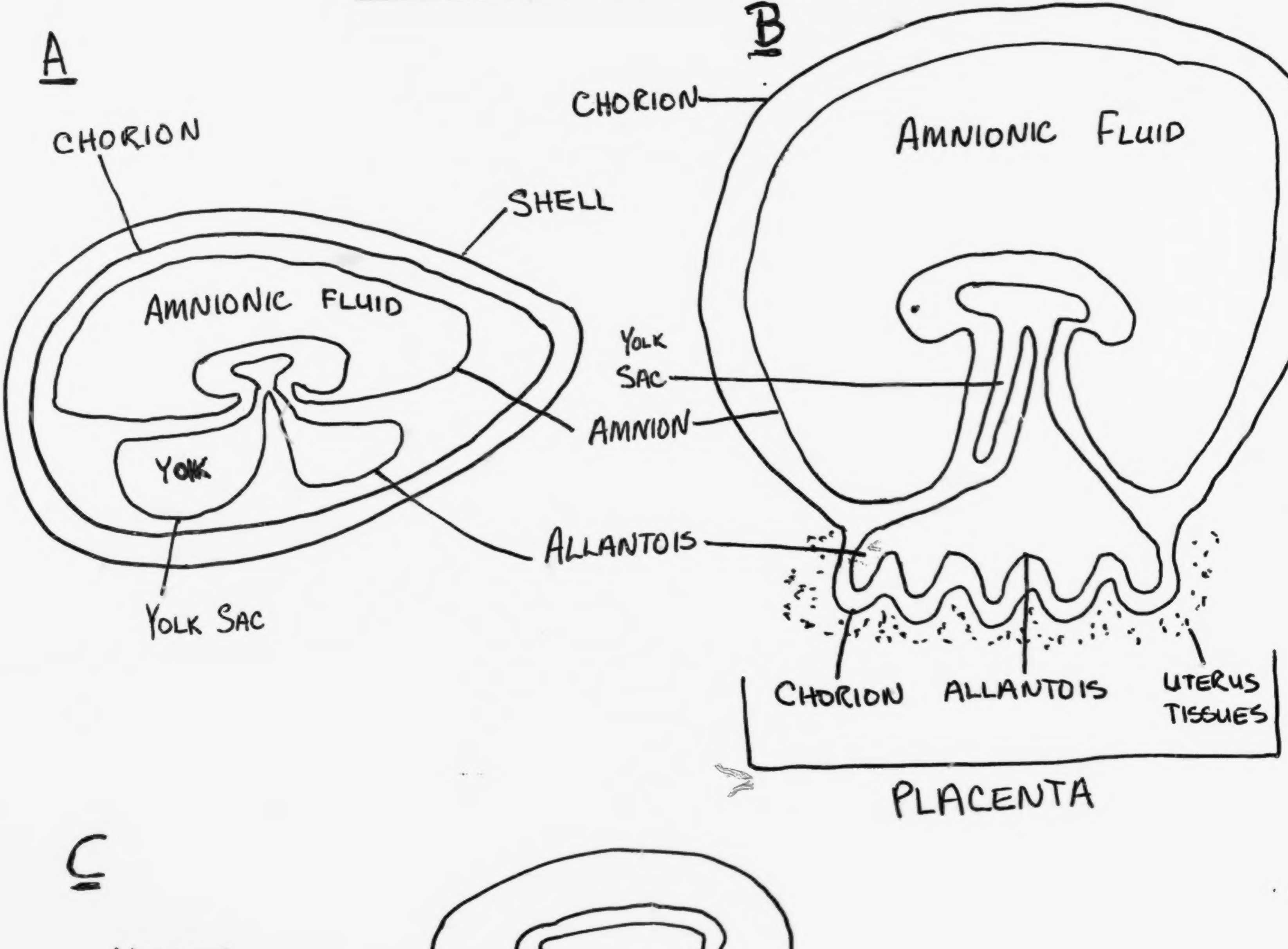
Just inside the chorion is a second membrane, the amnion. The amnion surrounds the embryo and becomes filled with a fluid which keeps the embryo moist and protects it from mechanical injury. It is sometimes referred to as bag of waters.

A third membrane develops as an out-pocketing of the digestive tract, the allantois. In animals such as birds and reptiles, it acts to collect wastes but in humans it comes in contact with the chorion and uterus to produce the embryo's blood vessels in the placenta.

The yolk sac is the fourth membrane. It develops as an out-pocketing of the intestinal tract but is non-functional in placental animals. In birds and reptiles it is filled with stored food to nourish the embryo. In humans all

FIGURE 7

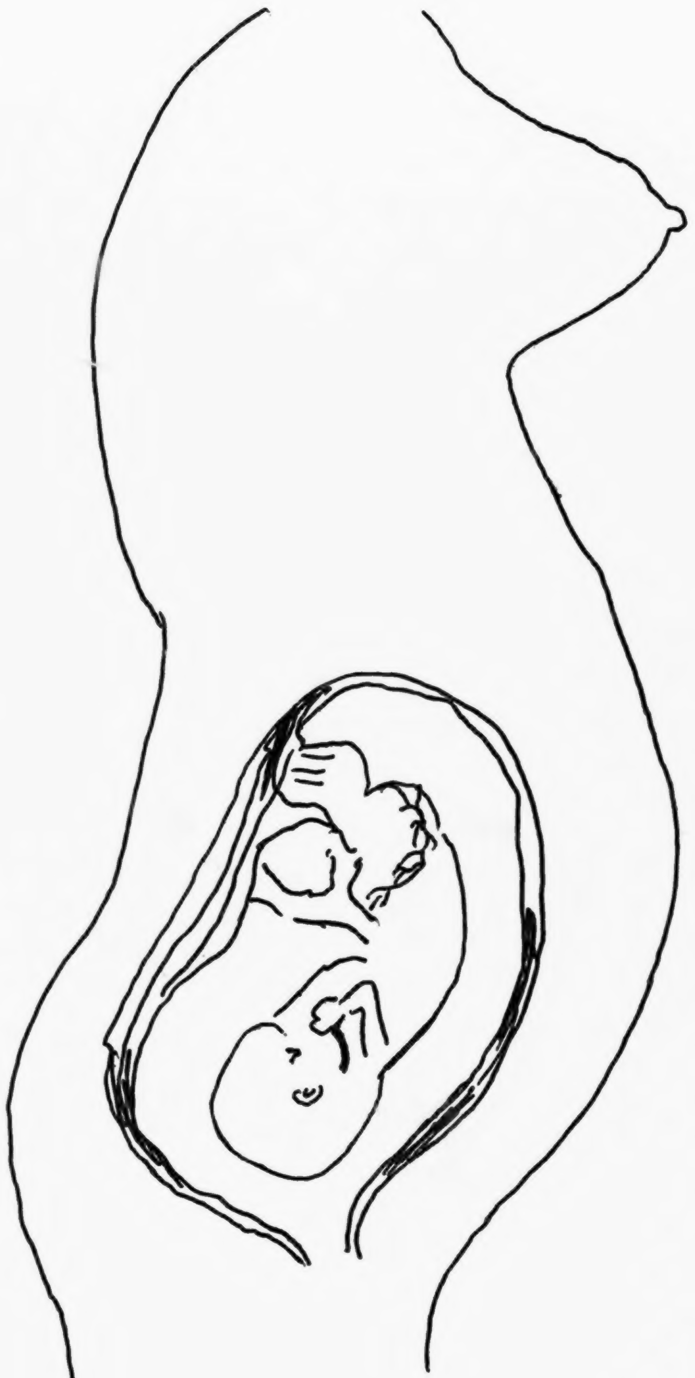
EMBRYONIC MEMBRANES AND CIRCULATION


A
CHORION
SHELL
AMNIONIC FLUID
YOLK
YOLK SAC
AMNION
ALLANTOIS
B
CHORION
AMNIONIC FLUID
YOLK SAC
AMNION
ALLANTOIS
CHORION
ALLANTOIS
UTERUS TISSUES
PLACENTA
C
HEART
UMBILICAL VEIN
UMBILICAL ARTERY
ALLANTOIS
AMNION
MOTHER'S BLOOD

A. The membranes in reptile or bird egg. Yolk sac and allantois functional.
B. The membranes of a placental mammal. Yolk sac non-functional and allantois develops into circulatory vessels.
C. Embryonic circulation. Note that there is no direct connection to the mother.

FIGURE 8

25 WEEKS AFTER CONCEPTION



such nourishment takes place via the placenta.

The umbilical cord is the tube formed by the amnionic folds coming together around the stalk of the allantois and the yolk sac. It contains the blood vessels which connect the embryo with the placenta. Figure 7 is presented as an illustration.

As development progresses and the embryo takes on human form, it is then called a fetus. This occurs after eight to ten weeks.

Hormones in Pregnancy

In the previous discussion of the menstrual cycle, it was pointed out that as the 28th day of the cycle approached, the corpus luteum became smaller, produced less progesterone, finally degenerated, and progesterone secretion stopped. This activity results in menstruation. How then is the uterus maintained during pregnancy? It is obvious that if menstruation did occur during pregnancy, the embryo would be aborted.

Scientists have found that the placenta produces hormones similar to pituitary LH and LTH. These placental hormones stimulate the corpus luteum not to disintegrate and to continue progesterone secretion. The placenta eventually reaches a stage where it begins producing progesterone and estrogen. The corpus luteum now disintegrates.

The concentration of progesterone and estrogen in the body resulting from placental secretion is much higher than during the menstrual cycle. This higher concentration and ratio of sex hormones prevents menstruation, inhibits additional egg development in the ovary, and prepares the breasts for nursing.

Birth

By the ninth month of pregnancy, the baby's head is usually turned down toward the opening of the uterus and will come out first during birth. Occasionally the feet of the baby are turned toward the opening. This is called a breech.

Birth begins with occasional contractions of the uterine muscles moving the baby toward the vagina. These actions are the beginning of labor. Little is known as to how the childbirth mechanism is started. At this early stage, the amnionic sac (bag of waters) usually breaks.

As the muscular contractions become stronger and more frequent, the baby is pushed through the vagina out of the mother's body. The umbilical cord leading from the baby to the placenta is tied and cut off. A small piece of cord remains attached to the baby but eventually dries up, falls off, and leaves its mark as the navel. The uterus continues to contract, expelling the placenta - the afterbirth.

Even though the source of progesterone is removed with the expulsion of the placenta, menstruation does not resume as long as nursing continues. The pituitary hormone which stimulates milk production apparently inhibits the production of FSH. Once nursing stops, FSH is formed, a new follicle develops, and the cycle reverts to its rhythmic non-pregnancy operations.

Growth After Birth

The newborn child is highly dependent on the parents for care but soon learns to turn over and sit up. As time passes, other independent actions are mastered, resulting in less dependency on the parents.

Puberty, which usually occurs in the early teens, is the termination of childhood and the onset of adolescence. There is no definite time when adolescence turns to adulthood. It is a gradual change which goes unnoticed and is an occurrence unique to each individual.

Numerous physical and psychological changes take place during this human metamorphosis. Some of these developments (personality and emotions) have already been discussed and others will be pursued in the following units.

Heredity

Thus far this unit has discussed how two cells, egg and sperm, unite and develop into a new generation. Each of the offspring resembles its species; that is, cats have kittens, petunias produce petunias, and humans have human babies. And yet, by observing these human beings, animals, and plants, it is obvious that differences between parents and offspring do exist. None is an exact copy of the parents.

Sometimes offspring greatly resemble their parents, sometimes their grandparents, and sometimes they show traits that are entirely new to their family. What determines whether offspring will be similar to or different from their parents?

In order to answer this question, we must look at the egg and sperm as cells. Generally speaking, all cells are made up of two main parts, the cytoplasm and the nucleus. The nucleus is the largest and most obvious object in the cell. It contains the chromosomes. The cytoplasm is all the material outside the nucleus.

The chromosomes contain nearly all the properties needed to construct a complete organism. Every form of life has its own number of chromosomes. Humans have 46 or 23 pairs. The chemical composition of the chromosomes is a substance called deoxyribonucleic acid or DNA. DNA is a very large molecule made of a series of subunits called nucleotides. It is the arrangement of these subunits that determines the physical characteristics of the organism. These "chemical instructions"are an individual's heredity and genetics is the science concerned with both the heredity and variation of successive generations or organisms.

Cell Division and Sex Cell Production

All of us began life as a single cell, the zygote. This cell divides to form two cells, then 4, 8, 16, 32, etc. Each time a cell divides, two cells result. Each of these two cells contains a nucleus with 23 pairs of chromosomes identical to the chromosomes found in the original parent cell. DNA has the unique ability to replicate itself during all division so that each cell of our body (except egg and sperm) has 23 pairs of chromosomes.

Sperm and egg are different in their chromosomal numbers from all other cells in the body. The egg and sperm contain only 23 chromosomes each - one member of each pair. This reduction in number, a necessity if the fertilized egg is to have only 46 chromosomes, is accomplished by a special form of cell division called meiosis.

Sex Determination

Of the 23 pairs of chromosomes in cells, one of these pairs is associated with an individual's sex. In women, the members of this pair are identical with each other, both being the so-called X chromosomes. In men, the members of this pair are not identical. Male cells have one X chromosome and one very different type known as the Y chromosome.

Since egg cells contain 23 chromosomes (one of each pair) and since the precursor cell from which eggs develop contains a pair of X chromosomes, every egg contains one X chromosome. Sperm precursor cells contain an X and Y chromosome so when meiosis occurs, each newly formed sperm therefore contains either an X or a Y chromosome.

Chance alone determines which sperm will fertilize an egg. If the sperm with the X unites with the egg a female will result. If a sperm with a Y unites, then a male is conceived. Thus, the possibility of having a boy or girl is 50:50. However, research findings indicate that the ratio of males to females (pregnancies) is approximately 150:100, and the ratio of live birth males to females is close to 106:100 in favor of males. During the life span of both sexes, males suffer greater casualties.

Inheritance of Traits

Extensive research tends to show that each characteristic of an individual results from a "plan" which exists in a section of the DNA molecule. Each of these sections or pieces is called a gene. It has also been shown that these genes are arranged in a definite pattern and number of sets. Each of these sets makes up a chromosome. In a human, this means that there are 23 pairs of such sets.

Each gene and its pair-member controls a trait in our bodies. For example, if the mother supplied in her egg the gene for brown eyes and the father supplied in the sperm the other gene for brown eyes, then the baby would be brown-eyed.

Suppose a child results from the union of an egg having the blue-eyed gene with a sperm having the brown-eyed gene. In such a case the child would be brown-eyed. The brown-eyed gene is said to be dominant over the blue-eyed gene. The blue-eyed gene is called recessive.

It is easy to see that two brown-eyed parents could have a blue-eyed child. That is, if each parent has a pair of genes in which one is blue and its pair-member is brown, the parents would have brown eyes. Nevertheless, they would each be able to produce a sex cell (egg or sperm) with only the blue gene. If these egg and sperm united two blue genes would be paired and a blue-eyed child would result. Other traits which are regulated by dominant genes are curly hair, dark hair, tongue rolling and many others.

Some traits are not a result of dominance but instead determined by a phenomenon known as blending or incomplete dominance. When a short body gene pairs with a tall body gene in a zygote, the offspring will be medium height. Skin color is another example of blending.

Hereditary Abnormalities

Color blindness, hemophilia, sickle cell anemia, clubfoot, and harelip are but a few of the many disorders which are a direct result of inheritance. Often these disorders are referred to as diseases. They should not be confused with such diseases as mumps, smallpox, etc., which are caused by the toxic effect of certain micro-organisms. The genetic disorders mentioned above are a result of the same type of gene inheritance as is eye, hair, or skin color, not micro-organisms.

Even though diseases caused by micro-organisms are not inherited as such, the susceptibility and resistance to them is inherited. It is a matter of common observation that some families appear to show predisposition to some diseases. The exact genetic basis for the susceptibility or resistance has been worked out for only a few of these diseases.

Environment and Heredity

Investigators have performed extensive studies of family histories including identical twin studies and now propose that diabetes, hypertension, appendicitis, and cancer have a hereditary basis. It may be true that almost everything in a living organism is due to heredity, either directly, as in hair color, and/or indirectly as in the form of susceptibility or resistance.

Much research is being done to answer questions on influences of heredity and environment. However, a summary of basic information on this subject has been presented in Unit One. A review of that section would provide the reader with a greater understanding of human development and growth.

Summary

In this unit, the development of the human individual was followed from zygote to adult. The zygote results from the union of an egg and sperm which in turn are produced under the influence of certain pituitary and sex hormones. The zygote develops in a uterus which nourishes and protects it until it is ready for birth. Development continues through childhood, adolescence, and adulthood under the influences of heredity and environment. As subsequent sperm and egg unite, the continuance of life is again initiated to grow and develop and some day reproduce.

INSTRUCTIONAL AIDS

Charts:

Overhead transparencies made from diagrams in this unit.

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UNIT FOUR

PUBERTY AND ADOLESCENCE

Introduction

Adolescence, as a stage of development, has become a very vital phenomenon in contemporary America. In addition to physiological changes that stimulate physical growth and maturation, emotional, social, and economic factors have influenced the behavior and, indeed, the culture of America's adolescents. This unit presents a description of the physiological forces that underlie puberty, together with a brief analysis of adolescent behavior.

Endocrine System and Puberty

One of the most striking features of all living organisms is their ability to maintain a constant internal environment. In humans this involves such things as the constant number of blood cells, body temperature, blood sugar, heartbeat, rate of breathing, etc. Even though the above-mentioned processes may vary, the variance is only for a relatively short period of time until equilibrium is once again achieved.

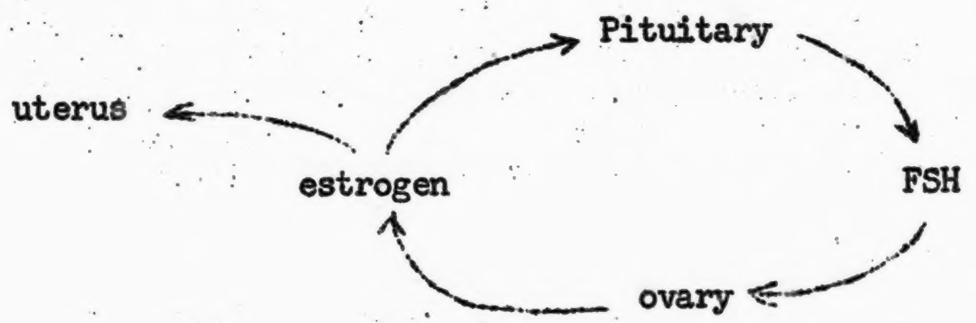
What is the regulating factor in maintaining this steady state? It is not one thing but many. Some body-regulating substances are chemicals such as oxygen, vitamins, and minerals which come from outside the body. The body makes other chemicals such as enzymes and hormones that help to maintain the internal environment.

Hormones are chemicals which are secreted by specialized glands called endocrine glands. Endocrine glands do not have ducts. The hormones they secrete are not delivered directly to the organs they regulate but instead are carried throughout the body via the blood. Salivary, sweat, and digestive glands are not endocrine glands because the chemicals they secrete are carried in ducts directly to the tissues they influence.

Endocrine control usually operates in conjunction with nervous control and in many instances the nervous system supplies information about the external environment while the endocrine system regulates the internal response to this information.

The regulatory role of the endocrine glands is two-fold. Not only do the hormones regulate the function of certain cells but they also control the manufacture and secretion of one another. That is, many endocrine glands cannot secrete their hormones unless they are stimulated to do so by other hormones secreted in other endocrine glands. The output of each gland is controlled wholly or partially by the output of one or more other glands and these other glands may in turn be regulated by the one they regulate. A control system of this kind is known as feedback control.

The workings of such a feedback control were discussed in the previous unit. The follicle stimulating hormone (FSH) secreted by the pituitary gland controls egg development in a follicle of the ovary. As the follicle develops, it begins to secrete estrogen which stimulates uterine development and also affects the pituitary FSH production. As estrogen increases, FSH decreases. As FSH decreases, the follicle is less stimulated to develop so it ruptures and releases the egg (ovulation). Now that there is no follicle, no estrogen is secreted to suppress secretion of FSH in the pituitary. Consequently the pituitary begins FSH production which will eventually stimulate the development of still another follicle. This feedback control is diagrammed below:



This type of feedback control system seems to be responsible for most endocrine activity.

Primary and Secondary Sex Characteristics

The interaction between the pituitary and sex glands (ovary and testis) functions continually to maintain the primary sex characteristics. The primary sex characteristics are the structural and functional organs of the male and female reproductive system. In one's teens, the pituitary output of hormones that stimulate the sex glands increases greatly. It is a result of this increase that a girl is able to produce eggs and a boy sperm. This sudden change in pituitary and sex gland secretion is called puberty - adolescence has begun.

Puberty is reached at different times in different individuals. Girls usually reach puberty between the ages of 10 - 14. Some girls experience puberty as early as age 9 and some as late as 15 or 16. In either case it is perfectly normal. Boys achieve puberty between the ages of 12 - 16 but once again, earlier or later arrival is normal.

In girls the onset of menstruation is the obvious signal that puberty or adolescence has begun. The reproductive cycle is now functioning, making available fertile eggs for possible fertilization. This is one of the primary characteristics of the female sex.

In boys, the onset of puberty is not so obvious. Occasionally a small discharge of seminal fluid is discharged from the penis. This discharge usually happens during sleep and is called nocturnal emission. The nocturnal emission may or may not contain sperm. Such seminal emissions show that testicular activity has begun and is perfectly normal for the growing adolescent boy. Some adolescent boys and men may have emissions once every few weeks during part of their lives, other boys and men not at all or only a few times.

The hormones also cause what are called secondary sex characteristics to develop. Such secondary male-female differences include different patterns of growth and distribution of hair; voice differences; difference in physical strength, endurance, and muscular development; skeletal differences, as in the hip region; differences in the amount of fat under the skin; and a marked difference in the degree of mammary development. In addition, sex hormones maintain sex urge, influence mental vigor and mental development, stimulate blood circulation, and promote cell respiration. They affect the body as a whole.

It should be recognized that primary sex characteristics, such as presence of the particular sex organs, determine the sex of the individual. The secondary sex traits are only supportive; they are not basic to the male or female role of reproduction. An individual, no matter how soft his voice or smooth his skin, is a man as long as the structure and function of his reproductive system are those of a male. On the other hand, if the reproductive system of a person is that of a female, then that person must be considered a female although some of her secondary sex traits may be masculine. In the great majority of cases, however, both primary and secondary sex traits are predominantly male, or female.

Adolescence

Adolescence is a transitional stage between childhood and adulthood which incorporates physical, mental, emotional, and social growth. As a stage of development adolescence starts with puberty and continues till maturity. This means that obvious and significant biological and emotional changes (puberty) signal the beginning of adolescence, while only gradual and less obvious psychological developments mark its end. The entry into adulthood is distinguished more by cultural and psychological factors than by physiological changes.

From the chronological point of view, most boys and girls enter adolescence between ages 10 and 15, although some may start earlier or later. Physical growth which is very pronounced at the beginning slows down to allow for a more gradual development of the body into adult stature. In most cases this is accomplished by age twenty, sometimes earlier.

From the cultural point of view, adolescence is not determined by chronological age. Cultural factors may postpone entry into adulthood until later years. Some people who are over twenty years of age may continue to be adolescent until they demonstrate adult values and assume adult responsibilities. On the other hand, some young adolescents enter adulthood not by reaching a certain age, but because of the demands of family and occupation.

Adolescent Culture

Culture may be defined as shared patterns of living that are communicated from one generation to another. It includes material elements such as clothes, automobiles, and buildings, as well as non-material elements such as language, religion, values, and laws. In short, culture is the man-made aspect of environment.

Each society has its own culture which distinguishes it from other societies. However, many cultures contain elements that are not unique to them. Many of the industrial products are widely known in many countries, and large numbers of people all over the world hold in common certain values such as the worth of man, love for humanity, and a basic belief that all people are born equal. This may be described as a world culture. In a similar way, one may speak of the Western culture, of the Judeo-Christian culture, or of the American culture.

It is obvious that most cultures are composed of sub-cultures. Just as the American culture is a part of the Western culture, the various groups in America are considered sub-societies having their own sub-cultures. In this regard, some of the major sub-cultures of the American culture are: middle-class culture, the American Indian culture, and the adolescent culture.

This means that a group of people live, think, and behave in a manner that is generally unique to them. They have a special identity, or a way of life. Our purpose here is to study the adolescent culture in contemporary America.

There are now in the United States approximately 26 million teen-agers most of whom are white. More than 60% of all teen-agers are city dwellers. The others are divided almost evenly between rural farm and non-farm communities. However, not all teen-agers are members of the adolescent society. A large number of those who are married, who are in the armed forces, and who are permanently employed do not belong to the adolescent culture. Their roles, concerns, and ways of life are generally adult-like. On the other hand, reaching age twenty does not by itself remove one out of the reach of adolescence.

The present generation of adolescents is a highly affluent one. Their material needs have caused certain industries to flourish. Certain products are exclusively designed for adolescents: clothing, records and record players, cosmetics, certain magazines, and certain automobiles. The consumption of material goods by adolescents amounts to several billion dollars every year. Affluence of contemporary teen-agers is attributed to general affluence in society. Teen-agers generally depend on their parents for their basic needs such as shelter and food. Part-time employment is a major source of income for most adolescents. Characteristic of teen jobs are baby-sitting, cutting lawns, summer camps and resorts, and similar occupations that lack permanence.

Affluence has brought the adolescent closer to his age-mates. Adolescents stay in school longer, they interact with each other more and they are more independent of adult supervision. Their ability to acquire material possessions has given them the material elements of their culture: certain styles of clothing, haircuts and hairdos, and other material goods that they as a group generally label as theirs.

Interaction between boys and girls starts early. Interest in the opposite sex may begin in the fifth and sixth grades. Dating and a system of values regarding sex is generally communicated by the peer group rather than by parents. Most other values that are characteristic of the adolescent culture seem to be communicated by the peer group. The meanings and moods of popular songs, the image of the ideal male or female is reflected in teen magazines, and the system of reward and punishment are all examples. A study by James Coleman[1] has shown that among high school students athletes and social stars are usually the most highly rewarded and accepted of all students. Boys find great rewards if they excel in athletics; girls compete for cheerleading as a form of athletic excellence, or to be social stars. Academic excellence is not as highly favored, and is found somewhat unacceptable if achieved by girls. The present authors believe that the picture has changed, and that academic excellence is as socially rewarding today as athletic ability.

The basic concerns of adolescents are generally self-centered. Most serious concerns are centered on two basic points of focus: (a) appearance: one's body build, skin, hair, overweight or underweight, etc., and (b) interpersonal relationships especially with members of the opposite sex: how to act on a date, how to gain confidence, and how to be attractive to a certain individual. These concerns are associated with the great quest for popularity. Older adolescents seem to be increasingly involved with broader issues such as social, racial and political problems.

Developmental Tasks of Adolescence

Adolescence has been defined as a transitional stage between childhood and adulthood. This means that physiological, intellectual, and emotional maturation are achieved during the teen years. Robert Havighurst[2] in his analysis of the developmental phase of adolescence has identified ten significant tasks that adolescents must complete before they can assume responsible adult roles. These tasks are:

1. Development of mature relations with boys and girls of the same age: this task involves social and heterosexual adjustment and ability to relate socially to members of both sexes.

2. Attainment of a masculine or feminine social role: the sex of the individual is determined by his physiological make-up. However, the social role of each sex is culturally determined. Boys learn to assume masculine roles, and girls feminine roles. A detailed discussion of this subject is presented in Unit Six.

3. Acceptance of one's body: too often adolescents are overly concerned that they may not be physically attractive. Maturation involves acceptance of one's body and learning to protect it and use it with personal satisfaction. One may be too tall or too short, overweight, or underweight, etc. While there is much that can be done to improve one's physique, embarrassment about one's real or imagined inadequacies generally disappears with maturity.

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[1] Coleman, James S. "The Adolescent Sub-culture and Academic Achievement," American Journal of Sociology, Vol.65, January, 1960, pp.346-347.

[2] Havighurst, Robert J. Developmental Tasks and Education. New York: Longmans, Green and Company, 1950, pp.30-63.

4. Gaining emotional independence of parents and other adults: one of the signs of childhood is emotional dependence on parents and other adults such as teachers. Growing up involves a certain degree of emotional independence combined with mature affection for parents and other adults.

5. Achievement of assurance of economic independence: complete economic independence during adolescence is neither possible nor necessary for most American adolescents. However, adolescents should make a start of gainful employment and prepare for eventual economic independence.

6. Selection and preparation for an occupation: adolescents should acquire information on a large variety of occupations and realistically select one according to their interests and talents.

7. Preparation for marriage and family life: during adolescence boys and girls learn more about their own sex and the opposite one. They develop an understanding of their needs and of the qualities they desire most in other people, especially a marriage partner. This prepares them for marriage which should be understood in a broad perspective.

8. Development of intellectual skills necessary for civic competence: this includes knowledge of one's society, its government, laws, and other institutions. A prerequisite for this achievement is general education which enables the student to understand his social role in our complex society.

9. Achievement of socially responsible behavior: living in organized society requires that laws and rules be observed. Socially responsible behavior is often regulated by one's knowledge of the values and standards of his community and society. Unit Seven will deal with this subject in more detail.

10. Development of a system of ethics as a basis for behavior: we live in a complex and scientific world that is undergoing major social changes. An individual's values determine how he relates to his world and what his goals are. A personal philosophy of life based on universal ethics and scientific truth becomes the guide for ethical behavior.

The Adolescent and His Family

The process of growing up is a process of change. One area of change that is felt by both adolescents and their parents is that of terminating childhood emotional dependence and status and establishing an adult status within the family. Generally this change is met with resistance by the parents and impatience by the young adolescent. Parents feel that their adolescent son or daughter is not mature enough, not ready to assume the new role of an adult. Children, on the other hand, find that their parents are often over-concerned or, sometimes, insensitive to their problems.

Conflict between the adolescent and his parents does arise. Both parents and children need to understand the roots of such conflict in order to minimize it and avoid unnecessary pain. In the opinion of the authors, parent-child conflict is attributed to ~~two~~ three basic factors:

1. Prolonged adolescence: Need for secondary, often college, education, and for occupational preparation has prolonged this transitional stage of development. As a result the adolescent's entry to the world of adults is delayed, and the interaction between the adolescent and his parents becomes more intense and lasts for a long period of time.

2. Adolescents' attempt to gain independence and adult stature: Gradusally the young adolescent moves beyond the family circle. He develops friendships on his own and promotes his individuality as an independent entity. Often, his parents are not prepared for this change. They may be overly concerned, even reluctant to acknowledge the level of maturity achieved by their teen-age child. This situation is compounded by the adolescent's tendency to reject the values of his parents and to disregard their judgment, especially when such judgment conflicts with the values of the peer group.

3. The Generation Gap: The "generation gap" represents the discrepancy between what parents and adolescents actually are and what they expect each other to be. When such a discrepancy becomes obvious and significant, conflict results and cross-generation communication is lost. In order to explain the present generation gap in the United States, it is imperative that we examine the reality of both the adult and adolescent generations and compare this reality with what each generation expects from the other.

The pattern of behavior of adolescents expected by parents is basically similar to what they themselves experienced during their teens. This expectation ignores many of the great changes in society that have taken place in almost all walks of life during the past few decades. Most parents of today's teen-agers were adolescent between the two world wars, primarily during the depression years. Only a few could be considered post World War II adolescents. The adolescent culture was hardly significant, and people's attitudes and values regarding the family, work, church, society and sex conformed largely to norms that have changed since then. The issues and problems facing adolescents at that time were more limited and not as intense as today's mainly because of rapid social change, and because of the growing size of the teen population. Affluence of today's adolescents as contrasted with the economic status of their predecessors thirty or forty years ago further widens the gap between the mood, values, and concerns of the two generations.

On the other hand, the present generation of adults does not conform to expectations of youth. Adolescents are generally idealistic, enthusiatic, and intolerant of social injustice or other social ills. Values and judgment of adults, especially older adults, are questioned, even dismissed as being irrelevant, unrealistic, or hypocritical. In short, there is a lack of sensitivity to the problems of today's adolescent by the adult generation, and there is a failure by the adolescent in understanding and appreciating the world of adults.

Furthermore, there is a loss of communication between the two generations. Not only are the concerns, expectations, and problems, of each generation different, meaningful communication is endangered by a decreasing level of contact between the two generations. Extracurricular activities and greater involvement with the peer group on the one hand, and greater occupational involvement compounded with demands of urban living on the other hand, have decreased the exposure of adolescent to his parents and them to him.

Sex and the Adolescent

Sexual awakening of the individual during adolescence is one of the significant changes that mark that period. Resulting from physiological maturation of the reproductive system and stimulated by cultural forces, the sex drive becomes a very strong motivating force. Boys are somewhat different from girls in that the male sex drive reaches its greatest intensity during the late teen years, while the female sex drive is relatively less intense during adolescence and does not reach its peak until the late twenties or middle thirties.

Regardless of sex, however, both adolescent boys and girls have to cope with their sexuality in its physiological, emotional, and cultural dimensions. How an adolescent handles his sexuality is a matter of extreme importance because every individual's sexuality is a part of his total personality. Knowledge of some of the patterns of sexual behavior during adolescence becomes necessary if the adolescent is to understand and cope with his awakening sexual drive.

Nocturnal Emission. Reference has been made to nocturnal emission which is the involuntary release of semen (by males) during the unconscious state of sleep. When this happens, the subject may have some recollection of a dream, or he may remember no images whatsoever. In both cases this occurrence is completely normal and should cause no alarm. Often, nocturnal emission is one of the signs of puberty.

Masturbation. The discovery and fondling of one's genitals occurs early in life. It is commonly observed in infants and young children and should not be confused with masturbation. Masturbation is most often defined as sexual self-stimulation that leads to climax or orgasm.

Surveys have been conducted whereby thousands of people were questioned in a clinical setting. The data show that masturbation is prevalent in more than 90% of males and over 60% of females at some time in their lives. This indicates that masturbation is a common rather than unusual behavior.

Masturbation is commonly considered to be an adolescent phenomenon, but many boys and girls discover orgasm long before puberty. The male, like the female, is able to experience orgasm without ejaculation. However, masturbation is not limited to adolescents since many adults of various ages are reported to engage in masturbation.

The social attitudes toward masturbation are varied. The traditional view is that masturbation is gravely sinful and harmful to health. This attitude is based on the conventional Judeo-Christian philosophy that sex is solely for the purpose of procreation. The idea that it is harmful to health comes from medical circles with traditional philosophics and observations that patients in mental institutions masturbated frequently.

A second look at masturbation as viewed by many current theologians is that sexual expression is a means of showing love and of giving one's self to another. Masturbation falls short of this ideal and for this reason is considered morally wrong. Although masturbation is accepted as being amoral, some are ready to excuse and even tolerate it in individuals for reasons of age or specific psychological problems.

An attitude of neutrality persists among many. It is their contention that it should be accepted but that more study is needed on the various patterns of masturbation. They are not prepared to encourage it, but they do not condemn it either.

There are also those that take a more permissive position. They view masturbation as not only completely harmless but positively constructive and healthy. They go so far as to encourage it among young people as an aid to more mature psycho-sexual growth.

Much of the negative attitude toward masturbation has been based on alleged physical and mental damage. Medical opinion today is that masturbation does not result in any physical harm. The physical effects of masturbation are no different than the physical effects of other sexual activity. With respect to mental health, it has been shown that if there is any psychological damage, it is not caused by the act of masturbation itself but by the feelings of guilt that are associated with the act when viewed by the subject as a violation of moral or religious values.

Experts in mental health and human sexuality are increasingly taking the position that masturbation is a normal process of sexual maturation. From a strictly medical point of view, there is no reason to try to prevent masturbation. Some theologians, however, stress interpersonal relationship as the essence of mature and appropriate sexual expression, and thus disagree with the medical point of view.

Because of the diversity of opinion about masturbation and the failure of our society to treat it with openness and objectivity, masturbation as a sexual activity remains a personal matter resolved primarily by the individual.

Abnormal Sexual Behavior

Some individuals practice sexual activities which are contrary to acceptable standards of society. Among the more common sexual deviations are: exhibitionism, where the individual achieves gratification by exposing his genitals in a public place; sadism, a means of obtaining sexual pleasure by inflicting pain; masochism, the achievement of sexual pleasure through pain inflicted upon him by his associate; and homo-sexuality, which involves two individuals of the same sex. Because homo-sexuality has become a major concern to many citizens a brief statement is presented here so that teachers may be able to answer students' questions objectively and openly.

Homosexuality. Most people are not purely heterosexual or homosexual, although some are. The sexual stimulation aroused by members of the opposite sex is considered a normal and healthy reaction. On the other hand, some individuals are stimulated sexually by members of both sexes, but they should not be considered homosexual unless they respond primarily to members of their own sex. Some psychiatrists consider only those who generally seek sexual gratification with members of their sex to be homosexual.

Known and practiced by individuals during various historical eras, homosexuality is not unique to modern societies. The reaction of any society to homosexual behavior is basically a cultural matter. In contemporary America, homosexual behavior is considered deviant and is often reason for social disapproval and punishment. This means that homosexuals cannot be happy or enjoy good social adjustment. Research is needed to identify the causes of homosexuality so that it may be minimized and also to enable society to understand the problems of homosexuals.

Some studies have already attempted to find the basic causes of homosexuality. Findings of such studies are not conclusive, but there are hypotheses that have been presented by some psychologists and psychiatrists. Some believe that there are biological, genetic or hormonal factors that are responsible for this "disposition" to homosexual behavior. This has not been proven scientifically. Others believe that disturbed family relations are responsible for this behavior. An over-attached seductive mother or a weak rejecting father may cause reverse sexual identification which is expressed in homosexual behavior.

Since the causes are not known, no effective treatment has been found for homosexuality. Some psychiatrists report limited success in converting homosexual behavior into heterosexual behavior. The majority of cases show no significant changes.

The American society is approaching human sexuality with more openness and objectivity. Research may uncover the basic causes and point to methods of prevention and treatment.[3]

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[3] For a more detailed study of this subject teachers are referred to SIECUS Study Guide #2, Homosexuality, Sex Information and Education Council of the U.S., October, 1967.

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UNIT FIVE

DATING, ENGAGEMENT, AND MARRIAGE

Introduction

The heterosexual relationship which has been developing throughout the child's life reaches a particularly crucial stage with the onset of adolescence. The child has reached the age when his own drives as well as the pressures of society require him to formalize his relationships to the opposite sex through general patterns of dating, engagement and marriage. The questions of how, when, and whom to date, and what to do on a date do not always have obvious answers to the adolescent. Furthermore, the adolescent is faced with the difficult problem of satisfying his or her own needs through socially acceptable behavior. Dating must be understood by the adolescent finally, as a stage of development that prepares the individual for the more binding relationships of engagement and marriage.

Values of Dating

A date is an agreement between a boy and girl to attend a social affair or to spend a period of time together.

While dating is a value in itself, for it affords couples entertainment and enjoyment, it serves other purposes too. Dating serves as a growth process by increasing self-understanding and understanding of others. It provides young people a means of getting to know the other sex and discovering traits they like or dislike in a partner. It is a time for going through a series of temporary attachments to find the type of person one likes best. Dating provides a time for learning how to get along with others and ways of building satisfactory relationships. For example, by this process one learns how to give as well as to receive. It also provides opportunities to become knowledgeable of how one interacts with others and to become aware of features of one's personality that people like or do not like. One of the most important factors that continue to shape the personality of the adolescent is his own idea of what his personality should be. One is capable of modifying many aspects of personality which influence the ability to get along with others.

Dating encourages the development of social skills and provides opportunities for practicing them. Social skills such as being considerate of others, learning to be friendly, carrying one's responsibility in conversation, moving comfortably among members of the opposite sex, and dressing appropriately for different occasions are learned. The dating process allows a person to observe and practice these skills, to test them out in different situations, and to develop social finesse. As a person gains experience and skills in mixing socially, he becomes more comfortable and at ease with himself and his partner. Dating contributes a great deal to a young person's social adjustment.

Dating experience provides the basis for the subsequent selection of a mate. Young people get a chance to try out and assess various kinds of relationships and to become aware of the ones they do not enjoy. Dating provides a basis for comparing members of the opposite sex and thus gives an idea of the type of person one might like to marry.

Dating is one of the means by which boys and girls get to know each other as sexual beings. Through association with the other sex one becomes aware of various masculine and feminine roles of behavior and one's feelings toward them. Through dating they become aware of sexuality as part of life. They learn appropriate ways of handling the sex drive, and discover their assets and liabilities as potential husbands or wives.

Kinds of Dating

Forms and patterns of dating vary considerably in different sections of the country. However, there is a dating sequence that youth generally follow and that is appropriate for various stages of development. Dating usually has its beginnings in a group process. This provides a natural easy way to be with the opposite sex. Following this is a period of casual double-dating and casual single-dating. When first beginning this type of dating, boys and girls tend to date someone they know and have regular contact with in school, their neighborhood, or church. Usually it is someone with the same socio-economic and religious background as theirs. At this stage many are more interested in the opposite sex in general, and not too choosy in selecting the particular one. Some boys and girls feel more comfortable double-dating (dating with another couple or a group of couples) because others are present to share the responsibility for making the occasion a success. Going steady occurs when individuals narrow their choice to one and date that person exclusively.

Age to Begin Dating

To the young, beginning dating represents growing up and becoming a part of the adult world. There is no magical age when it is right to begin. Customs and practices in the community, parents' points-of-view, the customs of the peer group, all have some bearing on deciding the time. Common sense dictates that young people wait until they want to date and feel comfortable in the relationship. In recent years, our culture has encouraged early socialization and has motivated some to date before they are ready. Some parents pressure the establishment of boy-girl relationships and place undue emphasis on being "popular." Other parents prefer that their children develop in other ways first. The mass media - television, films, and the press - stimulate romantic and sexual interests in the young. In a study of 3,000 college students, the group reported that the average age at which boys had their first date was 13.9 years and girls was 13.6 years.[1]

Selecting a Date

The usual custom in our country calls for the boy to ask a girl for a date. When the opposite happens, the situation is usually a special one such as a Turn-About Dance.

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[1] Paul H. Landis, "Research on Teen-Age Dating," Marriage and Family Living XXII, August 1960, pp.266-267.

As mentioned before, during the stage of early dating young people usually date someone they know well and with whom they feel at ease. From this framework boys go on to date girls they find attractive and ones that suit their personal tastes. Frequently they select persons with interests and traits like theirs. No one knows exactly what attracts one person to another. A satisfying relationship is one that brings out the best in each one.

In Christensen's study[2] in which he sampled the opinions of thousands of high school students, the following characteristics were preferred in a dating partner. The preferred date

is physically and mentally attractive,
is trustworthy and dependable,
is neat and well mannered,
is wholesome in attitudes and behavior,
is cheerful and has a good sense of humor,
is considerate,
is mature and not childish.

Patterns of conduct that were objectionable to the other sex were also listed. Girls criticized boys for being vulgar, for wanting to neck and pet too much, for withholding compliments, for being disrespectful, and for being careless in manners and dress. Boys criticized girls for becoming too easily hurt, for being self-conscious and shy, for being emotionally cool, for acting possessively or childishly, and for being silly.

Planning a Date

Thinking through and making plans for the who, what, when, where, and how of a date makes it go more smoothly and gives it focus. Girls appreciate receiving information in advance so they can dress appropriately for the occasion and be ready on time. For formal occasions courtesy demands that one invite his date and make plans well in advance. The interests of the couple should be considered when planning a date. Whenever possible, joint planning of a date should take place. This allows partners to state their preferences, see the other's point of view, and reach a mutually satisfying decision. A girl should be considerate and suggest activities that are within the boy's budget.

What to Do on a Date

Nowadays boys and girls enjoy and share interest in many of the same activities. Modern communities offer a variety of dating possibilities: Various sports and sporting events, school functions, plays, parties, museums, and movies. What one does on a date depends on who one's date is, one's peers, the opportunities and the limitations of one's situation (how much money one has to spend, whether or not one has a car) or one's interests and values as a person.

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[2] Harold Christensen, "Dating Behavior as Evaluated by High School Students," American Journal of Sociology, LVII, No. 6, (May, 1952), p.580.

Dating Courtesy

Dating is a joint venture in which an individual accepts responsibility for his own welfare and that of his date. The basic courtesy underlying dating is mutual respect and concern. In general a boy is charged with the responsibility of providing safe company and safe driving. Both the boy and the girl have the obligation of being prompt, being considerate of each other's feelings, and being responsible for making the date enjoyable.

Dating Behavior

As young people date and spend more time alone together, they are forced to make decisions regarding their behavior. Dating behavior is guided by one's own inner limits or values and the respect and concern one has for the other person. Family attitudes and teachings, religious beliefs, feelings of self-worth, and what one wants to make of his life are all factors in the development of inner limits. They are built up gradually over the years.

The degree to which young people express affection for one another and the manner of doing so is one aspect of the matter of setting limits. A special language has evolved over the years for the description of ways of expressing affection. Terms used in reference to expressing affection may vary from year to year but two — necking and petting -- have been used consistently through the years. Necking or "making out" is usually referred to as a light degree of physical intimacy like kissing, cuddling, or hugging. Petting involves the extreme physical intimacies such as French kissing, fondling the woman's body, or any contact to the point of sexual intercourse. Necking and petting represent increasing levels of physical intimacy.

In order to establish limits intelligently, boys and girls must understand each other's behavior. Differences in sexual development of the male and female, for example, must be understood. At present, research shows that a man reaches the highest peak of his sexual response in the late teens, followed by a gradual lessening. It never disappears entirely. He can be aroused easily through the senses by many external stimuli such as an off-color story, a girl wearing a tight sweater, or a sexy movie. Sexual stimulation produces a localized genital excitation which produces pressures and a demand for relief through ejaculation.

It is believed that a woman's sexual response is more complex and does not reach its peak until the late thirties or even forties. Her sexual response comes more slowly and in a different manner. Adolescent girls usually have a limited genital response to necking and petting. They rarely build up pressures that overwhelm.

When emotions build up, reason and self-discipline weaken. Many persons who start by petting, the body's natural preparation for intercourse, end with the sexual act because the body, when aroused by sexual desire, becomes very demanding for sexual gratification. Necking and heavy petting are the natural prelude to coitus.

A girl tends to associate sexual response with love while boys tend to relate it to gratification. The boy may engage in sexual activity for the momentary pleasure or as a conquest to prove manhood. Peer pressure may equate manhood with sexual conquest. If the group is all important to his feelings of adequacy, he will conform to this pattern.

Some young people engage in petting because they think it is necessary for popularity. Studies of dating attitudes indicate that this is not always true. In Blood's study of University of Michigan students, 39 per cent of the college men stated they preferred for a casual date a girl who did not have the reputation for petting while 75 per cent of the men stated this preference for girls they were serious about. Three-fourths of the women in the study disliked men with "fast" reputations.[3]

Satisfying relationships depend upon mutual respect. Using a person, taking advantage of a person to satisfy one's own needs, is called exploitative behavior. Examples of exploitative behavior are the girl who dates a boy for his convertible or the boy who regards his date as a sex object, not a person. Relationships based on such behavior are irresponsible, for they lack the basis of mutual respect. In a satisfying relationship the moral values and goals of each person have to be considered and respected.

Going Steady

When a boy or girl pair off and date only each other, they are said to be going steady. The idea has no standardized meaning, for it varies in different locales, among various age groups, and between individuals.

It differs from what our grandparents called "keeping steady company" in that the relationship may or may not imply intent to marry. For some, going steady means dating one person at a time with no serious intent. It is a part of the social life of the peer group in high school. The length of time varies. One might go steady three times in sixteen days or for a period of a year or longer. For some, going steady is a genuine courtship activity. Steady dating for students who plan to go on to college is usually not marriage oriented.

The Purdue Opinion Panel questioned thousands of teen-agers about whether or not they believed in going steady. Fifty per cent believed in going steady; eighteen per cent did not; twenty-five per cent were undecided.[4]

The process of steady dating has advantages and disadvantages. The advantages can be summarized briefly. Going steady is safer and more comfortable. Many young people feel more at ease with someone they know well. Some girls feel safer dating steadily, for they can anticipate what to expect and feel more confident in handling situations that need setting limits. Going steady permits one to spend more time with someone he likes and to see that person in many different situations.

Going steady may be more economical. Boys feel a steady date is more aware and accepting of his financial status. A steady is willing to accept low cost dates along with the more expensive ones. Going steady is a form of security. One has a dating partner when one needs or wants one. One is protected from competitive dating practices. Going steady is a means of becoming better acquainted.

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[3] Robert J. Blood, "Uniformities and Diversities in Campus Dating Preferences," Marriage and Family Living 18:1, February 1956, p.44.

[4] The Purdue Opinion Panel, 15:3, April 1957, p.4.

Steady dating has disadvantages as well as advantages. For example, going steady limits the opportunities to meet other persons of the opposite sex. Going steady limits personality growth by limiting the variety of friendships with the opposite sex, as many aspects of personality develop through interaction with others. Also, the couple may get too emotionally involved and become too possessive or jealous of one another. Going steady may lead to sexual experimentation. The major situation leading to physical intimacies among teen-agers is going steady. The petting-with-affection sexual code is popular with teen-age girls, and teen-age boys often accept a double standard for themselves.

Engagement

The engagement today is thought of as a "testing period" for marriage as well as a promise to marry. It is the stage in the courtship pattern which precedes marriage. The best break a marriage can have is when people take time to know that they are right for each other. Learning and understanding take place during the courtship period from the first date to the wedding.

According to surveys, falling in love at first sight is rare. How long does it usually take for a boy to propose marriage? In a study of 564 college students who had been or were engaged, Judson and Mary Landis[5] found that only 2 per cent became engaged after a period of a week or two. Twenty-six per cent had their first date one or two years before their engagement. Twenty-one per cent had their first date three or more years before. These studies indicate that college couples are likely to approach engagement and marriage in a cautious manner.

Many couples do not withstand the engagement period. According to research findings, about one-fourth to one-half of the engagements are broken off. Factors associated with broken engagements are loss of interest, geographic separation, parental opposition, cultural differences, and personality difficulties. Marriages that result from engagements last longer.

The length of the engagement period has to be worked out on an individual basis. Several studies indicate that couples who had no engagement period or one less than six to nine months made a poor adjustment to marriage, while couples engaged from two to five years made the best adjustments. The average length of time for an engagement is about a year or a little less.[6]

The length of the engagement period is less important than the way the time is used. It is a time for couples to get to know each other better by exploring each other's attitudes and viewpoints. It is a time for testing their ability to think and work together as a team or as partners. It is a time for making mutual decisions. During this period it is wise for both to have a pre-marital examination. Many states, including Illinois, require an examination for venereal disease before the wedding license can be obtained. The pre-marital examinations include: a complete physical examination for both the man and the woman, a pap smear for the woman (a simple test for cancer of the cervix), attention to any diseases or defects that might be hereditary, and counseling regarding marital adjustments and family planning. The importance of these examinations cannot be over-stressed. They allow a couple to enter matrimony in a state of optimal health.

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[5] Judson T. and Mary G. Landis, Building a Successful Marriage, New Jersey: Prentice Hall, Inc., 1963, p. 224.

[6] Ibid., p.240.

Early Marriage

According to census figures, from 1910 to 1950, the average age for the first marriage of men and women has declined. Since then the rate has remained about the same. The average age of first marriage for girls is between twenty and twenty and one-half years. At least one-half of the girls are married by the time they reach their twentieth birthday. Teen age marriage rates are higher for women than men.[7] Although the average marriage age has declined in the U. S., only a small proportion of high school students marry. In 1961, Garner and Sperry[8] found that about three per cent of the students in high school in the United States were married.

States have different laws regarding the legal age for marriage. Many laws stipulate that the boy must be twenty-one years of age and the girl eighteen before they can marry without parental consent.

Certain factors in our contemporary culture encourage youth to marry. Here are a few:

Pressure to marry. With the increase in the number of early marriages young people feel the need to "keep in step," and marry because everyone else in their group is getting married. It becomes a band wagon. Some young people develop anxiety over finding a marriage partner and worry that unless they select one early they will end up with second best.

Courtship patterns. In our society the courtship pattern is beginning earlier. There is more general acceptance of permissiveness toward early dating, going steady, and early engagement. Contemporary society emphasizes romantic love and the happy ending.

Premarital pregnancy. This is a causal factor in one-third to one-half of the teen-age marriages. Burchinal found in a study of high school marriages in Iowa that when the marriage occurred while both were high school students 87 per cent of the marriages were forced by pregnancy.[9]

Love. Some couples love each other and see no purpose in prolonging the stress and strain of waiting. The affluence of our society permits some young people to obtain jobs that give them economic independence, or it enables some parents to subsidize the marriages of their children. Some couples marry during college years and continue their education. Veteran's benefits, financial assistance from parents, government loans, opportunities for part-time employment make these marriages possible. Many young wives work to support their husbands through college.

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[7] Lee G. Burchinal, "Trends and Prospects for Young Marriages in the United States," Journal of Marriage and the Family, 27, May 1965, pp.243-254.

[8] Kate B. Garner and Irwin V. Sperry, "Scholastic Achievements of Married and Unmarried High School Students," The Bulletin of the National Association of Secondary School Principals, 45, May 1961, pp.79-84.

[9] Lee G. Burchinal, "Research on Young Marriages: Implications for Family Life Education," The Family Life Coordinator IX: 1-2, September-December 1960.

Military service. Young couples marry because they want the security of marriage before they face separation.

Mass entertainment media. A glamorous, unrealistic image of love and marriage is usually presented so that it appears a "cure-all" for every problem.

Escape. Personal deficiencies like the lack of judgment or lack of maturity lead some young people into early marriage. The girl who uses marriage as a form of rebellion against her mother or as an escape from an unhappy home situation, or the girl who marries to escape the need to make a living, are examples of such behavior. These individuals often have very little knowledge of marriage responsibilities and what it entails, and they use marriage as a "way out."

Emotional problems. Studies indicate that youth who marry early tend to have social maladjustments.[10]

Consequences of early marriage. The consequences of early marriage have not been adequately pinned down, consequently more research is needed. Not all young marriages are doomed to failure and unhappiness. Age alone is not an adequate criterion for predicting marital happiness. Other factors such as the maturity, intelligence, patience, and interpersonal skills of the two individuals must be considered as well as the financial state and the determination of the couple to make the marriage a success. However, for many young couples, income, education, and level of self-development are correlated to age.

Research studies indicate that girls who marry early tend to be socially maladjusted and have difficulty with school and community adjustment. They frequently have unrealistic views of marriage and see it as a solution to all problems. Boys who marry under eighteen years of age show poor social adjustments and school achievement. Teen-age boys who have satisfactory feelings about themselves are less likely to marry, for they want to further their education or training.[11]

Many boys and girls who marry early have unsatisfactory relationships with their parents. They marry to satisfy their need for security and love.[12] Unfortunately, many of the young married couples do not go on with their high school education; consequently, the educational level of young husbands and wives is lower than single persons of the same age.[13]

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[10] Evelyn M. Duvall, "Adolescent Love as a Reflection of Teen-agers' Search for Identity," Journal of Marriage and the Family XXVI, May 1964, pp. 226-229.

[11] Ibid.

[12] Rachel M. Inselberg, "Marital Problems and Satisfactions in High School Marriages," Marriage and Family Living XXIV, February 1962, pp.72-77.

Most of these marriages are hasty. Couples have not taken the time to know each other and learn how to work together toward common goals. Hence, many couples make poor marital adjustments or fail to make them.

Much of the marital trouble encountered by young couples centers around money. Job opportunities and advancement depend upon education and training and a youth without a high school education is handicapped. Unskilled jobs are less enticing and pay less.

Lack of income forces some couples to live with parents. Often resentments, jealousies, and dependence grow out of such situations. Premarital pregnancies and unplanned pregnancies create overwhelming financial burdens.[14]

Most evidence indicates that marriages entered into to cover premarital pregnancies are less stable than ordinary marriages. Feeling of resentment, quiet hostility, and fear create psychological strains.

Other problems of early marriage center around the process of settling down. Many wives complain that their husbands want to go out with the boys and chase around. Many are not ready to accept the responsibilities and limitations early marriage imposes.[15]

In the United States early marriages are not seen as a good thing. Both laws and school policies are formulated to discourage them. Most schools, if they accept married students, curtail their participation in activities.[16]

Data consistently point to higher divorce and separation rates among early marriages than with marriages begun by persons in their twenties. This has caused concern over the problems and effects of divorce and broken homes.

Many are concerned for the children resulting from these marriages. What opportunities does a child have when brought up by troubled, immature parents? Concern is expressed over neglect of the children as well as the possibilities that children will acquire the same inadequacies and characteristics of the parents. Parents serve as models from which children learn the skills of living.

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[13] Margaret V. Barkley and Agnes A. Hartnell, "High School Marriages: What They Mean for Home Economists," Journal of Home Economics, 53, June 1961, pp.431-434.

[14] Inselberg, pp.72-77.

[15] Inselberg, pp.72-77.

[16] Ivin S. Wilson, "Student Marriages in New Mexico Secondary Schools: Practices and Policies." Marriage and Family Living XXII, February 1960, pp.71-74.

Premarital Pregnancy

Premarital pregnancy or illegitimacy is the conception and birth of children outside of the sanction of marriage. The problems created by premarital pregnancy vary with the customs, attitudes, and social conditions of the society.

About 600 babies are born in the United States each hour, of whom 35 are illegitimate. In the United States about 62 per cent of the births out of wedlock are to non-white girls. However, locally and nationally the rate of increase for illegitimacy is higher among whites than among Negroes.[17] Nationally about 41 per cent of the illegitimate births are to teen-age mothers.[18] Every sixth child born in Chicago in 1968 is born out of wedlock with most of the reported cases involving low socio-economic groups. Many of the higher socio-economic groups manage to be excluded from the statistics by coping with their problems through private means.

Among the tragedies connected with premarital pregnancy is a higher death rate for babies born out of wedlock than for those born in wedlock. Also, a greater number of births out of wedlock are premature. Higher prematurity rates and infant mortality rates are associated with the absence of prenatal care.

Nationally about one-fourth of the babies born out of wedlock are placed for adoption. About one child out of five born out of wedlock receives public assistance. The others are absorbed and supported by their families.[19]

Federal statisticians predict an annual increase of 30,000 pregnant teenagers for the next decade. This figure is based on the increasing number of teen-agers in our population. Increased illegitimacy is not confined to the slums. Statistics show an increase in the suburbs. Also, the median age for the teen-age unmarried mother is decreasing.[20]

Among middle and upper economic groups of both races, illegitimacy is a personal and family matter dealt with by lawyers, psychiatrists, and ministers. Among the poor, illegitimacy is a personal and family problem that becomes a social problem dealt with by police, public welfare and, at times, prison.

Approximately 69,318 illegitimate children were on the rolls of Cook County Department of Public Aid in May 1968. The current level of financial assistance is $46 per person per month excluding medical costs.[21] As the illegitimacy rates continue to climb, communities are faced with a growing tax burden.

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[17] Ron Dorfman, "Illegitimacy Rates Growing Faster Among Whites," Chicago American, July 11, 1968.

[18] Floyd M. Martinson, "Sexual Knowledge, Values and Behavior Patterns," Gustavus Adolphus College, 1966, p.19.

[19] Martinson, p.19.

[20] Diane Divoky, "Can 150,000 School Girls Remain Invisible?" Education News, Volume 2, No. 5, March 4, 1968.

[21] Dorfman.

Until recent years western society has dealt harsh punishment to the mother of a baby born out of wedlock and legal rights have been denied the child. Thus, such a child was without claims on anyone for support. The matter of illegitimate birth was also recorded on the birth certificate of the child and as such was a public record in most states. Gradually through the years the picture has changed. In all states but one, the illegitimate child may inherit from the mother. In forty-four states the child does not have the right to inherit from the father.[22] If the mother proves the paternity of the child, the father too is responsible for the support of the child. In actual practice many fathers fall behind in payments and nothing can be done unless the mother takes court action. If support cannot be obtained through the father, communities offer financial assistance. The support of these women and children adds to the tax burden.

The child born out of wedlock faces many problems. As pointed out earlier, his chances for survival are less.[23] Home conditions with "no father" and a mother struggling to earn a living create other disadvantages. Educators have found that as early as first grade children from lower socio-economic groups without fathers in the homes score lower on intelligence tests than children from the same economic groups but with the father in the home. Large numbers of fatherless children growing up in the slums produce gangs.[24] Homes dominated by women do not provide young men opportunities to develop stable relationships with male authority. The lack of a mature father image is a causal factor in promiscuity and homosexuality.

Causes of Illegitimacy

The unmarried mother does not fit into one pattern. She may be of any age, race, or religion, or she may come from any socio-economic background or education level.[25] The causes of premarital pregnancy are multiple and interacting. Likewise, there is no easily applied formula for prevention.

Illegitimacy has been studied within various frameworks in an attempt to find the "who" and the "why" of the problem. These studies have usually focused on certain groups of unwed mothers. Vincent[26] presents causal factors associated with pregnancy from various time intervals in the past as follows:

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[22] Landis and Landis, p.276.

[23] Elizabeth Herzog and Rose Bernstein.

[24] Dorfman.

[25] Clark Vincent, Unmarried Mothers, New York: Free Press of Glencoe, 1961.

[26] Vincent, pp.19-20.

Period	Emphasis On
Before 1930	Immorality, bad companions, mental deficiencies.
1930's	Environmental sources, broken homes, poverty, "disorganized" neighborhoods.
Late 1930's - early 1940's	Cultural mores - accepted way of life in some sub-cultures.
1940's - early 1950's	Emotional disturbance, psychiatric explanations.
1950's - late 1950's	Sickness and saneness of society.

The following is a brief discussion of some of the causes of premarital pregnancies.

1. Inadequate knowledge about the nature of sex, reproduction and contraception. It is difficult for many parents and children to talk together about sex. Frequently young people receive information and misinformation from each other. For sex mores to be adopted as the more of an individual, they have to be taught by a significant figure with whom the individual can identify such as a parent, a respected teacher, or a minister. Many young people have little awareness or fear over the possibilities of becoming pregnant and show ignorance or misinformation concerning birth control measures.

2. Social practices. The trend in today's society of pressuring children into early heterosexual activities such as dating, going steady, and group parties is a contributing factor. Boys at an early age are curious about sex and interested in proving their manhood. For many there is no uniform or clear-cut moral code. Heavy petting with someone you go steady with is acceptable behavior for many teen-agers. The attitude of some is "if they do it, why can't we?" Dating intimacies tend to become progressive in nature from lesser to greater involvement. Many girls do not understand male aggression or ways of handling it. Some girls yield to it for popularity while others use it as an enticement to marriage. Young people have a vast amount of sexual freedom. The automobile, lack of chaperones, parties in unattended homes, lack of curfew, and permissive parents provide opportunities for sexual intimacies.

3. Economic conditions. Illegitimacy rates show a close correlation with other measures of social breakdown - poverty, overcrowded living conditions, and poor health rates.[27] Overcrowded living conditions lead to an early awareness of sex and often lead to unwholesome ideas. Adverse conditions discourage stable family relationships and encourage premarital and extra-marital relations. Boys from lower socio-economic levels are more likely to emphasize sexual intercourse as a goal in dating. When a female of a higher socio-economic group becomes pregnant, it is usually the result of a love affair,

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[27] John F. Schmidt and Wayne C. Rohrer, "The Relationship of Family Type to Social Participation," Marriage and Family Living, August 1956, pp.224-230.

but when females of a lower socio-economic group do, it is often the result of a casual date.[28]

4. Cultural factors. Some groups in our culture accept non-legal union as well as legal marriage. Some subscribe to norms which tolerate illegitimacy.[29]

5. Emotional conditions. Qualities of love and respect are instilled early in life and depend mainly upon warm, loving relationships with parents. It is most important for a child's development to feel loved and accepted. When this does not occur, feelings of self-worth and dignity are difficult to attain. In some cases, individuals turn to sexual intimacies to feel loved and wanted.[30]

Problems Involved

There are relatively few alternatives open to a pregnant girl. There is really no good "out." She may marry. If engaged at the time of conception and if her fiance is the father of the child, the situation is as favorable as could be under the circumstances. However, evidence indicates that marriages entered into to cover a premarital pregnancy are less stable than ordinary marriages. Christensen and Meissner[31] in a study found the divorce rate for such marriages was more than twice as high as for marriages when conception took place after the wedding. Reasons for this might be that the marriages were "forced" or "hasty" or that they were complicated by feelings of doubt and guilt. If partners are young, they face all the problems of an early marriage plus the strains of pregnancy.

She may remain unmarried and have the baby. She may keep the baby or put it out for adoption. Adoption services are inadequate with white babies standing a much better chance of being adopted than babies of other ethnic groups. Nationally about one-fourth of the out-of-wedlock babies are placed for adoption.[32] Many factors and pressures enter into the decision of whether or not to keep the baby. Sometimes there isn't much choice, especially for unmarried Negro mothers. Usually, however, girls decide what is best for the baby and for themselves. Arguments for keeping the baby are love for the baby, fear that the baby might get unworthy parents, and the desire to keep the baby in the family group. Arguments for placing the baby for adoption are avoidance of stigma of illegitimacy for mother or child, the adoptive parents will be more suitable parents for the child, and both the mother and child will have greater possibilities for a happy, successful life.

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[28] Vincent.

[29] Elizabeth Herzog, "Unmarried Mothers: Some Questions to be Answered and Some Answers to be Questioned," Child Welfare, XLI, October 1962, pp. 339-350.

[30] Ruth Latimer and Florence Startsman, "The Role of the Maternity Home Social Worker in the Prevention of Illegitimacy," Mental Hygiene, 47, July 1963, pp.470-476.

[31] Harold T. Christensen and Hanna Meissner, "Studies in Child Spacing: III - Premarital Pregnancy as a Factor in Divorce," American Sociological Review, 18, No. 6, December 1953, pp.641-644.

[32] Martinson, p.19.

Abortion. The girl may have an abortion, which is the expulsion of the fetus from the uterus. It is difficult to gather data regarding the frequency of abortion. Estimates vary from 200,000 annually to one or two million.[33] Abortions are of three types. They may be classified and described as follows:

Therapeutic. This may be defined as an abortion induced by a physician when the pregnancy endangers or seriously impairs the health of the mother. It may be performed during the early months of pregnancy. In many states before such abortions can be performed, it is necessary for the physician to obtain another physician's opinion as well as the permission of a hospital committee that has reviewed the case. Therapeutic abortions performed on psychiatric grounds seem to have become more common. Some authorities, however, question whether these are justifiable.

Spontaneous. This is an abortion that occurs naturally due to a condition in the mother or fetus. This type of an abortion is often referred to as a miscarriage. Studies indicate that oftentimes when these take place the fetus is abnormal or defective.

Criminal. This type of abortion is deliberately brought upon for the convenience of the mother rather than for health reasons. In most states such an abortion is illegal. It is usually done by a non-medical person who is willing to violate the law. The procedure is often done in an obscure place, a home, apartment, or office where the conditions are usually far below hospital standards. Many times no anesthetic is administered, and the instruments are not sterile. Usually a great deal of secrecy surrounds the procedure. The abortionist's main concern is collecting the fees and not getting caught. There is little responsibility taken for the health of the patient or after effects which might develop. In a study of abortion deaths in New York City, Helpern[34] found that a large percentage of cases encountered rapid death due to the methods used by a non-medical, ignorant person. These cases included deaths from improper administration of an anesthetic (like chloroform), hemorrhage, shock, air embolism, or from corrosive fluids into the uterus. He found there were more deaths from crudely performed abortions among single, unmarried women than married women. In addition to deaths, there were also cases of sterility, severe menstrual disturbances, and complicating factors for future pregnancies.

Sometimes individuals administer drugs to themselves for the purpose of abortion and do this only on the basis of what they have heard, have seen advertised or have had recommended by a drugstore clerk. Many of these drugs are ineffective for this purpose and also very dangerous. This type of criminal abortion is being used mainly by married women of the middle and higher socio-economic groups.

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[33] Henry A. Bowman, Marriage for Moderns, McGraw-Hill, 1965, p.608.

[34] Milton Helpern, "The Problem of Criminal Abortion," Quarterly Review of Surgery, Obstetrics, and Gynecology, Vol. 16, No. 4, October-December 1959, pp.231-234.

Much is published and discussed about the legalization of all abortions. Some argue they should be lawful for they feel it is the mother's right to make such a decision, that legal abortions are safer than criminal abortions, and individuals will continue to have them whether legalized or not. They point to the success of programs in countries with liberal abortion laws (e.g., Sweden, Denmark, Japan). Others argue against legalization of abortion by stating there is no justification for the destruction of human life. They point to the problems of risk and regret that accompany the procedure.

Education for Unmarried Mothers

Educational programs vary in type and quality. Most schools have restrictions that do not permit the unmarried mother to attend schools once her condition is known. Schools also discourage her returning to school after pregnancy is terminated. Some schools recognize the need for unwed mothers to continue schooling by providing home-bound instruction or a tutoring service.[35] In many communities these facilities exist for only a fraction of the girls who need them. For example, in Chicago of the 3,000 school girls who become pregnant yearly, facilities exist for only 500 to continue school.[36]

Some segments of society realize these existing policies must be changed and programs expanded to meet the needs of the unwed mother. She needs assistance in learning how to rear her child, how to provide a healthy environment for the child as well as education for her individual growth.

The National Council on Illegitimacy is working toward the development of comprehensive programs within the context of the school and community that offer academic work, counseling, and special training in homemaking and child care while the mother is pregnant. Plans for the mother following delivery would include day care for the child and continuing education for the mother. These measures would help girls gain stability and self-respect as well as information about contraceptives. Education is an important way of preventing a second illegitimate pregnancy.[37]

In today's society, though we may consider it unfair, the unmarried mother is often ostracized from the group and is the center of services that set her apart while the known father continues to move in his social group without restrictions.

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[35] Divoky.

[36] Dorfman.

[37] Divoky.

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UNIT SIX

HUMAN SEXUALITY

Introduction

The purpose of this unit is to provide the student with an opportunity for genuine understanding of and sensitivity to the nature of human sexuality and to help him grasp the dynamics of human relations, vis-a-vis the sexual dimension. It is centered upon several hypotheses or premises concerning human sexuality: human sexual beliefs and values, and human sexual behavior. These hypotheseshave been developed to be inclusive of the universe of human sexuality. Thus, each of the hypotheses individually constitutes a broad springboard to inquiry, discussion, analysis, and hopefully some assimilation by the student.

Before the hypotheses are listed and explained, certain essential observations must be made and guidelines given.

The hypothesesare descriptive. They are designed to describe the world as it exists, not as it "ought" to exist. Consequently, the teacher should attempt to maintain a professional objectivity in his approach, especially in the more normative areas. It is not his function to arbitrarily dictate "right" and "wrong."

The complexity of human sexuality should be emphasized. Human sexuality is one of the most meaningful conceptual tools that can be used in analyzing human behavior. Sex is what one is as a person. It is a highly complex phenomenon which relates to an unusually large number of psychological, physical and environmental variables. In order for the objectives of this unit to be met, these complexities and interrelationships should be continually emphasized.

Furthermore, the hypothesesare tentative. They are not absolute statements of "truth." Rather, they are propositions to be examined, explored, and questioned. Although some may contain elements of truth and some may more closely approximate truth than others, their limitations and purposes should be made explicit to the students from the outset; if the teacher senses a periodic tendency on the part of the students to unquestioningly accept the hypotheses, he should remind his students of the nature of the propositions.

Finally, the belief that sexuality is a part of the make-up of every individual underlies this unit. In the sense that sexuality is universal, it is natural. In order for an individual to know, understand, and accept himself, he needs to understand and accept his own sexuality. Thus it is imperative that the teacher convey a positive and wholesome attitude toward the subject and toward his students' relationship to the subject.

To maximize the effectiveness of this unit, the teacher should stimulate as much discussion as possible. Before elaborating upon the content of each hypothesis, it is suggested that the teacher propose certain questions to the students and let them discuss these questions among themselves. Here is a brief list of some of the more salient questions which may be used as a basis for discussion:

What is meant by the term, human sexuality?

What types of behavior relate to sexuality? What types of behavior do not in some way relate to sexuality?

What are the roles that people play, and how do these roles relate to sexuality? What roles do not relate to sexuality?

Does sexuality develop and change as the personality develops?

When do people first become aware of their sex identity?

How do the play activities of young boys and girls differ?

Are all human activities devoted to seeking pleasure and avoiding pain or unpleasantness?

How do people come to value the things they value and believe the things they believe?

What are the various beliefs that Americans have about the purpose, role, and standards of human sexuality? Why is there such diversity? Which of these beliefs are dominant? Why does our society have a different set of standards for boys and girls?

A list of hypotheses to be investigated and a brief explanation of each follows. The main content of the unit is composed of an elaboration of the hypotheses.

1. Man is at all times a sexual being. Although sex is not the sum total of an individual's existence, one can seldom divorce himself from his own sexuality. At all times, individuals are socially identified in some manner by virtue of their sex. For example, one's name, role in the family and other social groups, relationship to friends and peers, occupation, and general overall behavior are all closely related to one's sex. Thus, sexuality must be conceptualized to include more than just male-female relations.

2. Individual sexuality is a reflection and a part of the individual's total personality. Individual sexual behavior is a manifestation of the individual's personality. Sexual behavior, attitudes, and values do not exist independent of the individual's psychological and social make-up. Thus, for example, sexual deviations, such as sadism, masochism, and homosexuality, are not isolated "problem areas" but rather indicators of deeply rooted psychological and personal maladjustments.

3. Sexual attitudes and values, which are manifest in behavior, are learned through processes of socializing and conditioning. Just as an individual's personality is influenced by his total environment, so are his sexual values and attitudes. Thus, individual sexual values are a function of

prevailing societal values. Accordingly, individual sexual values and behavior will tend to vary from society to society, from culture to culture, from sub-culture to sub-culture, and from individual to individual. Sexuality, then is a very complex phenomenon.

4. In American society there is no single view regarding the purpose, role, and standards of human sexuality. The most prevalent beliefs about the role that sex should play frequently conflict with the role it actually does play. There is no consensus as to social sex roles. Today women and men often perform similar activities and play similar roles. Likewise there are many different viewpoints and interpretations of the role of sexual behavior and sex relations. For example, some feel that the sole purpose of sex is procreation, while others have a more permissive outlook.

Definition

In order to present a meaningful analysis of the above hypotheses, we must first establish a meaningful and workable definition of human sexuality. In developing such a definition, it is imperative that sexuality be recognized as referring to much more than factors that are associated with the sex act or other physical manifestations between males and females. Although physical relations and such precursors to physical relations as sexual appeal, passion and desire are of crucial importance to any understanding of man's sexual nature, it is equally important to consider those aspects of sexuality which are less directly related to the physical. Thus, a definition of human sexuality must consider two closely related areas: (1) behavior, attitudes, and beliefs which are commonly thought of as being overtly sexual in nature in that they are directly associated with physical relationships, and (2) social roles and concomitant behavior which is determined by sex but which is not directed toward achieving a goal that is related to physical or emotional pleasure. Bearing in mind the fact that these aspects are closely related and frequently overlapping, the following definition of human sexuality is proposed:

Human sexuality is (a concept which stands for) the sum total of human behavior, values, beliefs, emotions and physical existence, which are determined by or related to one's sex.

This definition is a broad one indeed, thus serving to emphasize the complexity of sexuality. A narrower definition would overlook the sexual aspects of a large number of human relations.

Man Is at All Times a Sexual Being

The Social Side of Human Sexuality.

The behavior of an individual at any given time is partly determined by the type of group in which the individual is a member. The roles played by an individual are determined by the group context.

Typically, most individuals belong to some or all of the following groups: family, church, school or occupation, neighborhood, and voluntary organizations. Each group presents certain specific norms or standards which cause the individual to act according to what is expected of him. This expectation is very important. For example, a man might be a math teacher, a football coach, an official in his church, and a musician. Even though he is a potential member of any group associated with any of these various activities, at any one time he ordinarily plays only one role, and the role he plays will depend upon the particular group and upon the expectations or norms of the other members of the group. If this individual walked into his math class and told his students to move out all the desks, and run fifty laps around the room, his students would be completely dismayed. The nature of the group, the role of the math teacher within this group, and the expectations of the other members of that group, are contrary to this type of behavior.

It is evident, then, that there are many factors which determine how people in groups will act. The nature of a group, its goals, and the norms or standards that govern its behavior are all important. Thus, people may play different roles each day.

It is generally recognized that physical relations among individuals somehow are related to sexuality. Many people have at least a vague realization that emotional and psychological relations also pertain to sexuality. But the social nature of sexuality is often overlooked. For example, responses to the question "What's the difference between human males and females?" might produce statements noting that males have penises and females have vaginas and are capable of bearing children. Along the same line, the differences in sizes of males and females might be observed. Some individuals might note that females show their emotions more readily than males. These types of differentiation take into account physical and psychological variations between males and females, and, therefore, point out two important aspects of human sexuality. Both of these will be thoroughly investigated later. But in order to emphasize the extensive meaning of human sexuality, its social aspects will be approached first.

If a young male student had tried to differentiate between males and females by stating that his sister had to wash the dishes in order to earn her allowance, while he had to mow the lawn and take out the garbage, he would have been indicating the differences in social roles played by males and females. This particular comparison indicates only one of a great many differences between males and females which are determined by the social side of their sexuality.

One of the first things that parents in our culture do for their newborn child is to give it a name. And that name is almost always indicative of the sex of the child. Pink and blue are used as symbols of the gender of the child, and this is very significant in that people's reaction to the child will be influenced by the symbolic meaning of these two colors. Long before a child can walk or talk, his sexual identity in society is being established, and the roles that he will play in the future are being developed.

By the time children are three years old, they have begun to think of themselves as male or female. In their early school years, this sex differentiation is a very important aspect of their personality development. During this time, sexual identity is established more through socially induced behavior and appearance, such as hair style or clothing, than by differences in genital organs.[1] This establishment of sex identity and appropriate behavior is continually encouraged and reinforced in that boys and girls are directed toward different types of activities and experiences, and each sex is exposed to different standards (norms) of behavior.

In most cultures the different experiences and training received by boys and girls are designed to enable children to assume culturally appropriate roles as adult men or women. Though it should be noted that those roles which are appropriate for men and women in one culture may not be at all appropriate in another, it can be said that, in general, the activities and training received by children tend to be reflective of adults, or at least the prevailing societal norms for adult behavior and roles. Thus, in our culture, little boys play war and little girls play house, for our culture generally assumes that adult males should be aggressive masculine protectors, while adult females should be mothers and housewives. The play activities of boys generally reflect norms for male adult character, such as aggression, bravery and emotional control. Girls, on the other hand, evidence conformity and affection, and they are more likely to express feelings of pain or fear.[2]

The tremendous variation in sex roles from culture to culture indicates the significance of cultural environment in determining sex behavior. The specific influences of cultural forces will be examined and compared later. At this point, it should be realized that though the specific nature of sex roles will vary, sex identification is an all important determinant for social roles.

In our culture as in others, the roles and expectations of individuals will depend not only upon the group but also upon the sex identification of the individual within the group. As pointed out earlier, a brother and sister who are both members of the same group, will perform different activities in meeting different expectations for their individual roles. Although both are children within the family group and to that extent may play similar roles, they have to perform different activities. Brother mows the lawn and takes out the garbage and sister washes the dishes and changes baby brother's diapers. And they do these different activities because they belong to different sexes.

Obviously the behavioral consequences of social sex roles are not limited to childhood. Just as the activities of the children in a family are largely determined by their sexual identity, so are the roles and activities of the parents. In our society the father usually is the breadwinner and he plays that role accordingly, He may also play the role of disciplinarian in the family. Mother plays the role of housekeeper, cook, and nurse within the family group.

Outside of the family group, the roles played by adults are also largely determined by their sex. There are few women carpenters, electricians, or lawyers. Likewise there are proportionally more female teachers, hairdressers, nurses, and secretaries.

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[1] David P. Ausubel, Theory and Problems of Child Development, Grune and Stratton, New York: 1958, p.443.

[2] Ausubel, pp.447-451.

In all cultures social roles and values are sexually differentiated. The specific roles attributed to the sexes will vary with the culture; in one society women will do all the physical labor, because men should not lower themselves to such tasks, and in another society men do the labor, for women should not be relegated to such work.

Man at any time and in any place cannot divorce himself from the social dimension of his sexuality.

The Personal Side of Sexuality. Earlier in this course, it was pointed out that personality is a product of continuous interaction between heredity and environment. Living experiences at any stage of development influence the individual's personality, and thus influence his reaction to himself and to his environment. This section will examine the impact of sexuality on personality development.

We have shown briefly that nearly all of man's social activity is related in some way to sexual identity. While it is difficult to deny the significance of sex in social role playing, it has also been proposed that human beings are sexual creatures in the physical and personal sense throughout their lives. Sigmund Freud, the first modern psychoanalyst, and many of his followers have suggested that from infancy to death humans seek and experience sexual pleasure. Freud further theorized that the sexual experiences and development of individuals' sexual character determined their total personality development.

In his theory of "psychosexual development," Freud identified five basic stages of sexual development, beginning with infancy and going on through adulthood.[3] Though Freud's theories have been questioned, revised, and modified by many psychologists, his findings and theories about the existence of sexual gratification in humans long before they reach adolescence have greatly broadened man's understanding of sexuality and its significance.

Other psychologists, including those who are in disagreement with Freud's theories, acknowledge the presence of sexual behavior very early in life. Such psychologists as David Ausubel[4] reject Freud's notions on infant sexuality, but they agree that certain aspects of early life behavior is sexual in nature. Infants manipulate their sex organs to obtain relief of tension. This type of manipulation involves erogenous sensuality that leads to reduction of tensions of anxiety or frustration.

This form of play is different from adult sexuality. While adult sexual behavior is based on biological hormonal factors compounded with an awareness of socio-cultural significance of sex, infant's sex play is non-specific, and is lacking of true biological prerequisition, mainly hormonal activity.

Nonetheless, upon reaching puberty sex glands become activated, and sexual behavior takes a specific adult form. It becomes more pronounced, and the urge is often compounded with cultural factors. Cultural taboos, mores, and the general attitude of society are now influencing the individual's behavior directly and indirectly. Furthermore, sexual desires become strengthened and then tend to continue even when the biological basis of sexuality is removed. Each individual develops his own outlook toward his sexuality and its purpose, and he develops specific attitudes that may be favorable or unfavorable that stamp his personality with a unique character.

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[3] Sidney M. Jourard, Personal Adjustment, Macmillan Company, New York: 1963, pp.401-404.

[4] Ausubel, David P., Theory and Problems of Child Development, Grune and Stratton, New York: 1958, pp.251-255, 444-446.

The psychosexual nature of man is something that is always with him. Regardless of the way in which an individual adjusts to his sexual desires, it will have important consequences for his own personality development, his behavior toward others, and his performance in socially defined sex roles.

Man, then, is constantly a sexual being in both the social and the personal sense. Others' expectations of him, the roles available to him, and the type of group within which this role can be played are all conditioned by his sexual identity. And many of his own personal satisfactions, pleasures, dilemmas, and frustrations are the consequences of his personal sexual development. The whole realm of interpersonal relations and intrapersonal existence is largely determined by the individual's sexual adjustment.

Individual Sexuality is a Reflection and a Part of the Individual's Total Personality

Freud's analysis of sex as the basic human quality which conditions all behavior, emotions, and personality characteristics may or may not be true. Psychologists have pointed out several individual needs or drives which they feel exist independent of sex. For example, A. H. Maslow, a contemporary psychologist, has theorized about the conditions in which man develops his personality and abilities to the fullest.[5] Maslow proposed that in order for a man to reach the highest stage of personality development where he has actualized all of his personality potential, "self-actualization," he first had to satisfy certain basic human needs, such as physical needs, safety needs, love and esteem needs. It is only after an individual has become secure in his own physical existence and safety, developed love relations to gratify his need for affection, and gratified his need for respect and recognition by others that his self-actualization can take place. Once a man has satisfied all the needs of self, Maslow believed he becomes a self-actualized person and can then direct his activities and interests toward some object or cause outside the self.

Maslow's "hierarchy of needs" and his concept of the development of the self-actualized personality differs significantly from Freud's theory of the development of human personality to the extent that Maslow de-emphasizes the importance of sex. Nevertheless, if an individual is ever to achieve self-actualization, he must gratify his need for affection and love, needs which may be considered sexual in nature. If sexual conflicts, which may originate in childhood, or adulthood, are not resolved the individual cannot achieve meaningful interpersonal relations and the self-esteem which results.

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[5] A. H. Maslow, "A Theory of Human Motivation," Motivation and Personality. New York: Harper & Row Co., 1954, Chap.5.

Personality is a subject which has been given extensive attention elsewhere in this course. It is not the intention here to summarize or review that material. However, it is important to note the relationship between an individual's sexuality and his own personality. A brief discussion of some of the ways in which people deal with their sexuality in both socially acceptable and unacceptable manners will serve to illustrate this relationship.

As discussed earlier, infants universally engage in certain manipulative behavior involving their sex organs. As this behavior continues, the child discovers his body and becomes more aware of its functions. This behavior also helps the child establish his own sexual identity. However, the child may be taught by his parents to refrain from self-manipulation. Associated with this, certain attitudes regarding the role and function of the sex organs are developed. These attitudes may be normal and they lead the child to further healthy development. In some cases, however, the parents convey negative attitudes that lead to shame or feelings of guilt. Enforcement of such feelings may make them a part of the child's personality which, in turn, becomes manifest in behavior.

The process of sexual development ideally prepares the individual to relate his sexuality to adults of the opposite sex. As the individual reaches adulthood, he incorporates his sexual desires and values with other values related to his society's model of adult male-female relationships. He understands and accepts his own sexual desires, and he does so relatively free of anxieties or guilt if his development has not been impaired by fear or shame. A healthy adult feels no need to repress or reject his sexuality, and as a result he is capable of channeling his desires in directions that provide rewarding gratification.

However, extreme anxiety resulting from fear or shame may block normal psycho-sexual development. Feelings of guilt and disgrace may become permanent, and sexual development may be damaged. When this happens a women may be caused to be "frigid" or a man may become "impotent."

This is only one example of the ways in which sex reflects and/or influences personality and behavior. A few other examples need only be cited in order to show the vastness of this relationship. It is not uncommon for men in our society who doubt their own sexual adequacy or masculinity to seek out as many sexual experiences as possible in order to provide themselves with self-esteem. Likewise, a woman who has doubts about her own attractiveness or femininity might become promiscuous to assure herself that she is desirable as a female.

Many individuals who, for a number of reasons, feel depression, loneliness, tension, or conflict may seek out sexual relations as a compensation. Excessive masturbation may be the result of non-sexual conflicts, such as loneliness or poor peer relations. In such cases masturbation may be used to relieve such tensions.

Sexuality is very much a part and a consequence of personality. However, it must be noted that this relation is largely conditioned by the culture in which the individual lives and the prevailing values concerning sex that exist in that society.

Sexual Attitudes and Values, Which Are Manifest in Behavior, Are Learned Through Processes of Socializing and Conditioning

By definition, a culture is self-perpetuating. In order for a society to survive and for the various forms of social organization and social institutions which make up that society to continue over time, each generation must pass on to the next the values, beliefs, traditions, and customs upon which the society rests. Human beings perform activities and behave in certain ways because of something they believe. Even the simplest of activities is initiated with an underlying belief about something. Thus, when a man gets in his car, puts the key in the ignition, and turns the key, he does so in the belief that that action will cause the car to start and take him to his destination. No one ever puts one foot in front of the other without believing something about the outcome.

Whenever many different beliefs are related to one another so as to form belief systems, they may produce very complex patterns of behavior. Societies are composed of these complex behavior patterns which in turn reflect complex belief systems. Obviously, certain societies, such as ours, are more complex than others, and the degree of complexity of behavior patterns will depend upon the complexity of the particular culture dominant in that society.

If one were to leave his society and observe just a few of the many different societies in the world, he would immediately be struck by the great variation in some of the most basic social relations and organizations. The family, one of the most common and basic of social institutions, will vary greatly in form and character from one society to the other. For example, our society is essentially a patriarchal society, meaning the father or man of the family is formally dominant. Women take the names of their husbands and children the name of their fathers. Men are expected to assume authority, earn the means of living, and discipline the children. But this is far from being a universal phenomenon. In many societies kinship, inheritance, names, etc., are dominated by the woman's side of the family. In some others, young people engaged to be married may hardly know each other. Sexual values, beliefs, and behavior vary greatly, and the sexuality of any individual will depend largely upon what the society at large values and believes. Because of this great cultural variation in the roles of the sexes and of sexuality itself, there are few universals that can be called "natural." It is universal that only females can give birth and have the necessary physical equipment to feed and nourish children. But some societies don't recognize the relation between sexual intercourse and pregnancy. The women who begin to grow with child do so because they have been cursed, and as soon as the child is born, the mother does all she can to divorce herself from what we consider basic responsibilities and instincts of motherhood.

Our own society is one of the most complex in existence. The American "melting pot" contains an almost unlimited number of beliefs, values, and outlooks on human sexuality. Consequently, the forms of behavior that reflect these different attitudes vary greatly. Nonetheless, there are certain trends or patterns concerning sexual behavior that can be related to certain consistencies in beliefs.

In American Society, There is no Single View Regarding the Purpose, Role, and Standards of Human Sexuality. The Most Prevalent Beliefs About the Role that Sex Should Play Frequently Conflict with the Role it Actually Does Play

In attempting to describe or analyze sexuality in American life, one is faced with the task of discovering consistencies in a society that is built upon diversity. Earlier in this unit, the importance of social setting and childhood experiences were emphasized in showing the development of sexuality. In primitive societies, the patterns or regularities in this development are much easier to identify than in America, where every home is different and where every child is witness to and participant in often vastly different experiences. Each American family develops its own style, patterns and relations. The American child, unlike children in less complex societies, has no single, well identified, institutionalized model or ideal upon which to base his own behavior as a male or female. The great variation in sexual behavior and in the values or beliefs concerning sex behavior makes the description of ideal types of the male and female sound very superficial. In fact, the American ideal might better be called an American dream, for such stereotypes find little parallel in reality.

Every American child discovers very early in life that some day he will have to assume an appropriate sexual role in the adult world. Training for such a role begins almost as soon as the child is able to learn. The first toy a little girl will probably have is a doll, and at a very early age, she will be sneaking into her mother's bedroom to put on her lipstick, hats, high-heels, etc. In this way, the young girl learns that she is destined to be a woman. While the play activities of young boys have less relationship to their adult roles, they still give early indications of what our society expects of the male. Appropriate sex models are less available to boys than girls, with the possible exception of athletic activities which do not serve as a model but as an indicator of a recognized characteristic of maleness, which is physical prowess.

In describing a model American male or female, our observations have to be limited to middle class society. Thus, any similarity between the stereotypes and many Disney movies is not merely coincidental.

The model American male is aggressive but gentle in his relations with women. He dominates any major decisions that are made in the home. Above all he is the provider and protector. He is successful in his vocation and is recognized as a leader in his local community, someone others come to for advice. He is typically very much in love with his wife, who is the one and only girl for him. Although he may have fooled around a little before marriage, once he found his "one and only" he never had any desire for any other woman. He maintains his fine physical condition and works out frequently to stay in shape. He's a real competitor and a self-made man who can't tolerate failure or defeat.

The female counterpart is a career mother. Although she may have hobbies and activities outside the home, such as her garden and her bridge and charitable clubs, her primary concern is the care of her husband and children. She is a very feminine creature. She is also competitive and successful in her activities but never too successful, especially in a job or in competition with men. The ideal American woman is very attractive physically. She appeals not only to her husband, whom she has won, but also to all other men, whom she must never win. She evidences cute little habits and mannerisms that are both sexy and feminine.

The ideal American male and female are married to one another. And they're married because they fell in love and chose each other for better or worse for life. The ideal marriage demands that the relationship be founded upon pure love and choice. The ideal couple may have known each other since grade school and come to realize on a beautiful June night that each one really loved the other but had always been afraid to say so. Or the ideal man and woman may have discovered each other for the first time on a trolley-car or subway, where they fell hopelessly in love at first glance.

The sexual behavior of the ideal man and woman is a little less nebulous and easier to identify than the social sex roles that they play. The fact that both the ideal man and woman are sexually desired by others is testimony to their masculinity or femininity. However, implied in the culture of middle class America is the notion that pre-marital sexual involvment is more permissible in the case of males than in the case of females. Also implied is the notion that sex is for men and love is for women, and that the two are separated.

It is obvious and perhaps fortunate that there are very few, if any, ideal men and women and ideal marriages in American society that conform to this description. Yet this type of image is perpetuated by many movies, soap operas, and romance magazines. And it exists in the minds of many American men and women. However, the great diversity in the experiences of American children and great overlapping and variation in the social sex roles of American men and women, is an indication of the great number of beliefs about maleness and femaleness that exist in our society.[6] Likewise, the variations in sexual relations and behavior among Americans indicate the different beliefs and values that exist in that area. Nevertheless, it is possible to describe patterns of sexual behavior that exist in our society and to point to several sexual standards or value systems which relate to these behavior patterns.

Their puritanical sex codes notwithstanding, twentieth century Americans have been far from puritanical in their actual sexual behavior. There is a tendency for us to associate the new permissiveness in sexual attitudes with a general increase in pre- and extra-marital intercourse. The Kinsey reports have shown, however, that there is very little difference in the percentage of non-virgins among groups of women born during the first, second and third generation of this century.[7]

The belief that there has been an increase in pre-marital intercourse results from the greater numbers of people taking part in such activities (although the proportionate number has not necessarily increased), and from a greater openness with regard to discussion of sex, which reflects general attitudinal changes. These changes in attitudes toward sex reflect a general acceptance of such behavior. And it is important to note that this new acceptance has brought with it an increased emphasis upon the importance of affection and a general rejection of promiscuity. A considerable amount of pre-marital sexual activity exists today, whether one approves or not. And that activity is partly controlled by the affection between the male and female involved.

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[6] Margaret Mead, "Our Complex American Culture," Male and Female, William Morrow & Co., New York: 1949, Chap.12, pp.245-264.

[7] Ira L. Reiss, Premarital Sexual Standards, SIECUS Study Guide #5, 1967, Sex Information and Education Council of the U.S., p.7.

Four major sex standards governing pre-marital sex relations have been identified in the U. S. today.[8] These are (1) abstinence; (2) the double standard; (3) permissiveness with affection; and (4) permissiveness without affection.

Abstinence, a sex code prohibiting sexual relations before and outside of marriage, has long been the formal religious standard for sexual behavior in the western world. Many individuals who accept the abstinence standard usually see it applying more to females than to males. The period of "Victorian morality" during the nineteenth century brought with it a fantastic increase in prostitution in the country. Thus, abstinence has in general been a standard which has limited the sexual activity of women rather than men.

Acceptance of the principles of the abstinence standard by males has resulted in greater increase in their guilt rather than the limitation of their sex activity. Thus, the double standard, which recognizes and accepts the sexual inclinations and desires of males while denying the same to females, tends to be closely associated with abstinence.

The changes in sexual behavior that occurred in this country during the 1920's represented more of a change in the behavior of the American female than the male. A rapidly industrializing and urbanizing society brought significant changes in social organization. The urban woman's role and her relationship to men began to change as she found herself free from many of the traditional ties and obligations of the farm. As women gained economic independence, they began to extend their pre-marital sexual experiences. But even though sex became relatively permissive during the 20's, such activity probably brought with it a considerable amount of guilt for the participants; for the rapid change in sex behavior had not been accompanied by a relaxation or change in moral norms. Openness of discussion and acceptance of such behavior did not exist to the extent that it does today.

Today abstinence is still the most formalized and articulated sexual standard, and the double standard is still very much with us. While abstinence is probably the dominant standard for a majority of females and a sizeable portion of males, especially those less than twenty years of age, the standard of permissiveness with affection is accepted by a very large minority of both sexes. Even individuals who accept abstinence frequently indulge in heavy petting, often to orgasm. While the percentage of pre-marital sexual intercourse has not increased throughout the last forty years or so, intimate sex relations short of intercourse have increased. And this is a reflection of increased liberalization of sex standards with a greater emphasis upon affection. Sex without affection has a relatively small following today despite the widespread publicity it receives. In seeking to develop his own pre-marital sex standard today, a young person will find that there exists

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[8] *Ibid.*

> ".....a legitimate choice among valid alternatives, and even those who accept abstinence defend the right of others to choose permissiveness. The legitimation of choice is a significant change and one that goes along with the trend toward more permissive sexual attitudes."

The fact that the alternatives open to individuals in their selection of their sexual value standards are more valid does not diminish the extent of conflict involved in this selection and in the behavior that follows. The individuals who select a standard must be aware of the potential conflicts inherent in any standard. Obviously the extent and nature of any such conflict will depend upon the personality of the individual. However, there seems to be one general factor contributing to the sexual conflict and anxieties among non-married individuals in American society. American society in general and courtship patterns in particular place heavy emphasis upon freedom and individuality of selection. This in turn conflicts with what is still the most socially acceptable sex standard, abstinence and the double standard.

Our society has developed a pattern of dating and courtship which is very conducive to sexual permissiveness. Our culture has discarded chaperonage. Young couples are permitted to place themselves in very solitary interpersonal situations in which sexual relations can easily occur. The instruments available to young people in this affluent society, such as automobiles, money, leisure time, etc., have gone a long way toward facilitating such conduct. The conflict results from the fact that while our society has developed extensive social settings for pre-marital sexual involvement, that same society punishes individuals who engage in this activity.

Punishment can be found in two main forms. The first and the more obvious form of punishment is found in social rejection, or at least lack of acceptance, of unmarried mothers, or of experienced unmarried young women. Society, as composed of individuals and institutions, offers little help to those who violate its codes.

The second form of punishment is less obvious. It is intrinsic, and seems to originate with the individual himself. This is the feeling of guilt that many young people experience upon their involvement in pre-marital sexual activity.

Our society has preached puritanical abstinance for over 300 years. Almost all children are brought up to believe in the puritanistic standards of self-control and abstinence. Many young people, therefore, channel their energies into non-sexual activities: they sublimate. Others, however, seek sexual gratification through pre-marital intercourse. Some such young people have to face psychological discomfort and anxiety. They may feel extensive guilt over their sexual behavior.

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[9] *Ibid.*, pp.13,14.

Adolescents may rationalize their sexual permissiveness. They may eliminate the common deterrents to pre-marital sex such as pregnancy and venereal disease. But they may not escape the danger of suffering considerable mental and emotional anguish. This anguish is a result of the feeling that they have violated basic standards they grew up to accept consciously and unconsciously.

In conclusion, then, it can be stated that today's young people face a serious and critical situation in the selection of their individual sexual standard. They are bombarded with an infinite amount of material from television and other media which present models of sexual activity that seem desirable and acceptable. Yet the prevailing moral climate of our society condemns permissiveness.

In making a psychologically gratifying selection of a sex standard and behavior, the individual is advised to heed Socrates' ancient directive to "know thyself." To do this one must be aware of his own personality, his society and its values and expectations, and the consequences of his action for himself and others. There is no pat answer. For human sexuality is a very complex phenomenon.

On Love

The experiences which humans may casually or confidently categorize as love are vast, divergent, often contradictory, and always complex. In searching for a meaning of love, one must explain such diverse loves as love for work, husbands or wives, sports, mothers and fathers, pets, television, God, babies, or food. The objects of love vary, so does the meaning of love that different people have toward the same type of object. The concern of this section will be with that category of love which human beings direct toward other humans.

Our society generally recognizes a fundamental difference in the love people feel for their husbands or wives, their neighbors, children, brothers and sisters, and mothers and fathers. It is generally assumed that there are different kinds of love. The love that a man feels for his son differs in kind from the love he feels for his wife. By differentiating kinds and intensities of love, some people feel that they are able to distinguish "true" love from infatuation, or sexual passion.

In his book The Art of Loving, psychoanalyst Erich Fromm states that love types depend upon the object of love.[10] Although Fromm implies that the object of love will determine the type of love, this does not mean that love differs in kind, for he defines love not as a relationship with specific people, but rather as "an attitude, an orientation of character" that determines how an individual relates to life as a whole.[11] The individual who commits and devotes all of his love to one object or one person, and is unconcerned for the rest of humanity, is not experiencing love but a relationship based solely upon mutual needs. Most people suffer from the fallacious belief that love exists in the object, and that it is only necessary to discover the right object. The fallacy, says Fromm, is that most people do not see that love is an activity of the mind, which reflects the strength of the human spirit. The loving man is a free man, and his loving activity is a free activity. He is not a victim to some overriding passion and his activities of love are not merely the finding of solutions for his own problems or gratification of his own needs.[12] Thus the infamous situation where the sadist marries the masochist cannot be described as love.

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[10] Erich Fromm, The Art of Loving, Bantam Books, Inc., New York: 1963, pp.38-53.

[11] Ibid, p.38.

One of the basic properties of love is giving. But this giving does not mean merely sacrificing. Those who feel that it is better to give than receive because giving is painful are saying that it is better to experience pain than joy.[13] The giving of love is an expression of aliveness and vitality. It is a means of extending one's own self and relating to the world and thus escaping from human aloneness. This aloneness or separateness plagues all men, and it must be overcome by uniting with others through love. If one loves someone else, he must be able to say, "I love you.....I love in you everybody, I love through you the world, I love in you also myself."[14]

Love is a disposition toward man and the world. Fromm notes several basic types of love which relate to different objects, such as brotherly love, motherly love, erotic love, and self love. Yet it is the first of these, brotherly love, which is the prerequisite and essence of all love. It is the love for all men. It is an activity in which one experiences a union with others and discovers the truth of human oneness. The differences in men are superficial. We are all men, and as such we are all in need of help - in need of union. To love the helpless, the wretched, and the foreigner is to begin to develop brotherly love. "Only in the love of those who do not serve a purpose, (does) love begin.....to unfold."[15]

To love and to understand love is difficult and rare. The activity of love is perhaps the highest form of all human activities. To love one person is to love all persons. It is the expression of the productive character, or perhaps what Maslow would call the "self-actualized" individual. Love is not a vehicle for satisfying psychological frustrations and insecurities. It is an activity of maturity.

Love and the Adolescent

Studies conducted by Broderick and Rowe,[16] and Broderick,[17] point out that romantic love is experienced by approximately 50 per cent of all preadolescents who are ten to twelve years of age. While the meaning of "love" changes as the individual develops into adolescence and adulthood, the fact remains that preadolescents consider themselves to be "in love." This is the stage that marks the beginning of romantic adventures in most people's lives in our culture.[18]

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[12] Ibid., pp.79-89, (for a discussion of the various types of pseudo-loves which are commonly mistaken for real love).

[13] Ibid., pp.18-19.

[14] Ibid., p.39.

[15] Ibid., p.40.

[16] Carlfred B. Broderick and George P. Rowe, "A Scale of Preadolescent Heterosexual Development," Journal of Marriage and the Family, 30 (February 1968), pp.97-101.

[17] Carlfred B. Broderick, "Social Sexual Development in a Suburban Community," Journal of Sex Research, 2 (April 1966) pp.1-25.

During this stage, the influence of adult-controlled models of romance is not very great. Literature, songs, television and film productions do not deal with preadolescent romance, and it is doubtful that any romanticized standards have ever been publicized for this age group. Therefore, the preadolescent is influenced primarily by his peer group. Kissing games are rather casual, although some preadolescents already start dating at this age.

As boys and girls enter adolescence, their socio-sexual development is accelerated both physiologically and emotionally. At this stage they become subject to intense emotions not only because of biological changes producing intense sexual desires, but also because of cultural influences. Songs, movies, magazines, and television programs advertise a general model of romantic love. Of particular interest is the observation that while this model of romance is geared toward adolescents and young adults, it is generally created by adults and not adolescents; adults who produce movies, publish magazines, and sell their products.

Adolescents are often influenced by the model portrayed to them through mass media. Often this model is not realistic. According to this model, love is directed toward a beautiful woman or a handsome man, thus suggesting physical beauty as a prerequisite for love. The model also suggests a combination of other qualities that cause people to fall in love. While a certain number of all prerequisite qualities may actually be found among many people, it is unrealistic to seek an object of love, or a relationship dictated by the model because the model is void of many other human qualities that movie producers or advertising agencies do not consider "glamorous" enough to be part of the model.

Many men and women who seek this type of love remain unfulfilled. They may achieve objects of love that are only symbolic of the desirable model, but they rarely achieve love. While our culture provides status for symbolic achievement of romance, human needs are fulfilled only through love.

Adolescence is the stage of life when boys and girls discover each other and themselves. Dating and other activities provide most teen-agers with sufficient opportunities to discover the qualities they like most in members of the opposite sex. They experience relationships that enhance their happiness and others that cause them frustration or loneliness. They also learn that "beauty is in the eyes of the beholder" and that love is beauty. If this stage of development is not achieved, and if an individual continues to think of beauty as love, he will probably never be fulfilled.

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[18] It is true that many preadolescents experience an early love emotion directed at some popular star, but this type of love - the "crush" - does not involve people of the same general age.

Destructive Relationships:

Once in awhile an individual is caught in a relationship that does not enhance his or her happiness. The resulting frustration, even despair, is not caused by environmental factors such as economic hardships or failure to achieve success in a given activity; rather the cause is found in the interplay of two personalities. It is true that many married couples are divorced or separated because of environmental factors, but others suffer from a destructive relationship that endangers the happiness of both partners.

Adolescents, too, in their dating activities may experience relationships that are basically destructive. Psychologically two people may be described as incompatible, or that they do not fulfill each other's psychological needs. However, this facet of human behavior is difficult to analyze since some destructive relationships may serve the basic psychological needs of the two partners. In broad terms, a relationship becomes destructive if it generates extreme degrees of anxiety, jealousy, hostility, or depression. In order to understand and evaluate any relationship, one must examine the external (environmental) forces that may produce some of the symptoms listed above. If the causes are found to be rooted in the interplay of the two personalities, the relationship itself is considered unhealthy, and thus should be terminated.

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UNIT SEVEN

STANDARDS GOVERNING BEHAVIOR

Introduction

This unit presents a system of principles to guide adolescent boys and girls as they develop their own values and standards. As the student learns about behavior, he becomes ready to interpret the knowledge he has gained and to apply this knowledge to an examination of his own behavior.

An analysis of personality and how it develops has been presented in an earlier section in this course. That section, however, does not explain how an individual develops his values and how such values direct his behavior. This section presents a brief review of how values are acquired and become part of the individual's personality.

Definition: Values are norms or standards that become intrinsic and personal. Usually values imply preference of a moral, esthetic, or judgmental nature, and as such they govern behavior, especially if an individual can choose one of various alternatives. Visiting a foreign city, one may decide to go to a museum, spend the afternoon watching a soccer game, or visit a neighborhood theatre. His preference for one of the above activities is determined by how he values each one of them. In other words, his values become the basis of his choice.

Development of Values

Infants are born helpless. They are almost completely dependent on others in satisfying their needs. They have very little choice, and more significantly, they are aware of very limited alternatives. If hungry, they cry, and if fed they sleep or play.

As the child grows up, first within the confinement of his family, and later as he ventures into other people's homes and in school, he becomes aware of existing alternatives. If he falls while attempting to walk, he may laugh or he may cry. If he is hungry he may choose a cracker or a glass of milk. He also learns to respond to people, and the manner in which he acts often determines the kind of response he will receive from them, and vice versa.

Soon the child learns he has responsibilities. There are rules, and he has to observe them. He also learns that there are ways of avoiding rules or ignoring them without punishment. The basic pattern of development generally instills in the mind of the child that there are consequences for his behavior, and that his choice of alternatives at any situation is modified by what he expects the consequences for that behavior to be.

As the child ventures deeper into new relations and into new behaviors, he discovers that rewards and punishments vary in intensity according to his observing or ignoring the rules and according to the particular rule he has observed or violated. Rewards are usually given the child in the form of love, acceptance, praise, or even in the form of toys and gifts. Punishments are dealt in the form of rejection, scolding, or even spanking.

As rewards and punishments vary in relation to the particular rules, the child discovers that certain rules are more important than others. This may be referred to as the hierarchy of values. Society may be permissive about some of its rules, but it enforces others more closely. Naturally, not all rules are laws. In fact much of our behavior is based on the "unwritten law" where people generally have accepted certain standards, or values, as the basis of their behavior.

The family, school, church, mass media and other social institutions formally and informally inculcate the values of society to the younger generation. As children grow up they learn about their rights, and privileges, and those of other people. A concern for other people develops in the child, at the beginning at a superficial level, and later in the form of beliefs and convictions. Values become an intricate part of one's personality, although sometimes an individual is not aware of the strength of his values. For example, some of the people who fought the Nazis were not aware they felt so strongly to be involved in resistance, or to suffer and die.

Such decisions reflect values. Their strength is evident when individuals are willing to be responsible for the outcome of their behavior. In the same manner, the child learns that his behavior is followed by consequences that may bring satisfaction or dissatisfaction for himself and for the other people involved in his behavior.

As the child matures and moves away from the family circle, the standards of the peer group become increasingly important. The adolescent conforms to the standards of his peer group because he desires acceptance by them, and he rejects his family rules because he wants to establish himself as an independent entity. The peer group provides acceptance for the conforming adolescent, and the solidarity of the "gang" pulls the adolescent away from his family whose rules often seem unreasonable to the group. Some psychologists believe that the identification with the adult society is lost for a time until the adolescent's needs to identify with his peers lose their intensity.

In the process of development the child learns that his values are not the only guide for his behavior. Organized society places many demands on all individuals whether they be children or adults. There are expectations from, and responsibilities toward the group, and the individual gains acceptance or rejection if he conforms to or violates established norms. This means that conflict may arise between what one would like to do and what he ought to do. Naturally, people differ in the way they resolve such conflicts.

In order to act intelligently and ethically, one has to be aware of his rights and privileges and those of other people, and to have some accurate knowledge of what is generally expected of him. The family may have certain expectations, the teachers some others, and the peer group may probably have different expectations. In addition, one is expected to abide by the laws of his state and country. Associated with all these are expectations for one's self. How can one choose among the alternatives that are present in any situation?

The answer to the above question is not simple, although we may simplify it here for the purpose of explanation. We often choose among alternatives with the assumption that one type of behavior or another would result in a certain outcome that we desire. The outcome we desire may be consistent with our values, or it may not, but we favor it because it brings an acceptance or love of others.

But sometimes we engage in behaviors whose outcomes we cannot predict. In cases like this, the individual is interested more in the behavior itself rather than its outcome. Often, one's choice of alternatives is determined by the desirability of the particular behavior as well as by its predictable consequences.

This means that in order to behave ethically and intelligently, an individual should examine both the act or the behavior in which he may engage, and its logical consequences. His knowledge of himself and of his society will enable him to arrive at wise choices. His ignorance of what his goals are, and of what society accepts and rejects will result in unpleasant outcomes for himself and for those who are associated with him.

An important element that has not been discussed yet is responsibility. Since man is generally free in determining his behavior, so is he responsible for what he does. Since his behavior affects his associates and, perhaps, all of society he is responsible to himself, to his family, and to his country.

Standards for Sexual Behavior

Ideally, the rules and standards that govern sexual behavior should be the same as those that regulate non-sexual behavior. To manipulate some other person's emotions is similar to embezzlement and to deceive some trusting person is like giving false testimony. The golden rules in our culture are: (a) respect for one's self and for others, and (b) responsibility to one's self and to others. The first rule is based on acknowledging the worth and value of the individual; the second is based on the demands of organized society.

As the child grows into adolescence, his body undergoes significant changes. Associated with the physical changes, his orientation and needs also change. He starts to seek acceptance and admiration of members of the opposite sex. Dating brings new dimensions to his personality, and much pleasure and warmth are derived from sharing interests and activities with members of the opposite sex.

Often dating relationships develop into intimate ones. Young people may feel strong love toward a certain boy or girl, and the sexual stimulus combined with the need for love becomes very intense. This condition may cause two people to tie their lives together in marriage, or to seek sexual intercourse out of wedlock.

Our society, with its increasing complexity, requires that marriage be postponed until young people are emotionally and occupationally prepared to cope with the demands of married life. This prolongs the years of abstinence. In the meantime our way of life offers young people many opportunities to develop intimate relationships that may lead to sexual intercourse. This implies that the adolescent must make decisions in regard to his sexual behavior. Influenced by basic values that teach him chastity and consideration of others, and stimulated by strong biological and emotional desires, he finds that he himself must decide on how to handle his sexuality and how to express his emotions to someone he loves.

The authors believe that adolescents need to consider three basic questions before they can decide on sexual involvement. First, they should concern themselves with the question of ethics. Second, they should concern themselves with the possible consequences of premature sexual involvement. Third, they should be willing and prepared to accept the responsibility for their behavior.

Ethical behavior is based on one's values and beliefs which are generally the values of his society or his group. In our society, parents, schools, and other social and religious institutions teach chastity. This belief becomes deeply rooted in almost all children. Also, our society recognizes the worth of the individual and children are brought up to be honest and fair in their relationships to others. This means that ethical behavior is based on honesty, respect and concern for the welfare of one's partner.

Furthermore, one has to examine the possible consequences of his behavior. Is the adolescent boy or girl likely to develop anxiety and feelings of guilt? Are they mature enough to overcome psychological stress and cope with the possibility of illegitimate pregnancy? Often young people find themselves trapped in a situation where they have to marry someone they really do not want to marry. Feelings of guilt further complicate the situation, and the attitude they have toward each other often changes from love and consideration to hostility or resignation. For a boy this often means termination of his formal education and facing up to great financial problems. These combined with psychological problems become difficult to bear.

For the girl, changes are even more complex. Not only is her anxiety centered around the status of the relationship but also the rejection of her membership in the peer group. Physical changes will be constantly occurring that demand consideration and affect her relationships and her self-esteem. Need for understanding and affection is increased. Anxiety about the future must include provision for the birth of an infant. But before that time the daily hurdles create pressures that are unpredictable in their strength. And always there is in the subconscious the nagging knowledge that in our society the illegitimate child faces an undeserved handicap.

Finally, the question of responsibility must be considered. After examining the possible consequences of his behavior, the individual must be prepared to accept responsibility for his behavior. Basically, he should be concerned about his own welfare and the welfare of his partner and their families. If pregnancy occurs, he must face his responsibility toward the unborn child.

In conclusion, every adolescent boy or girl has to cope with his/her sexuality in our complex society. Behavior of any adolescent has far-reaching effects and may change his entire life. Adolescence is a period of life that can be rewarding and filled with growth and satisfaction. It is during this period that children develop into men and women. Unfortunately, it is also a stage in development that presents extreme emotional pressures and possibly serious problems. Young people may experience both joy and hardship, but much of what happens to them is a direct result of their own behavior.

INSTRUCTIONAL AIDS

Filmstrips:

Responsible Sexual Attitudes, by Family Filmstrips.

Responsible Sexual Behavior, by Family Filmstrips.

(Both available from C.I.C. Film Library).

Films:

Phoebe, National Film Board of Canada.
(Available from Illinois Department of Public Health).

A Very Special Day, Universal Education and Visual Arts.
(Available from C.I.C. Film Library).

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UNIT EIGHT

ARTIFICIAL STIMULI AND DEPRESSANTS

Introduction

This unit is concerned with problems associated with the use and abuse of drugs, tobacco, and alcohol. A study of the nervous system is a prerequisite for understanding the effects of those products that stimulate or depress the normal processes of perception. Legal, emotional and health problems are examined as possible consequences to abuse of drugs and other artificial stimuli and depressants.

The Nervous System

The human body is in itself a single unit made up of smaller units. These units progress from the cell, to a tissue, to an organ, to a system. The final structure is the organism which is able to perform numerous functions. There must, therefore, be some way of regulating these activities and giving control and organization to the body. There also is a need for communication between the external world as well as with the one found within the body. The nervous system meets these needs of the organism and provides the overall coordination for all body activities. The nervous system does this by receiving stimuli and transmitting these to effectors which then make the adjustments necessary to life. The nervous system consists of sense organs, nerves, brain, and spinal cord.

Sense Organs

The sense organs of the body are the receptors of stimuli for the nervous system. Without these the world would have no color, sound, taste, nor smell. It is through these special cells that we are able to gain knowledge of what is happening outside as well as occurrences within the body. The sense organ is the sensory end of a dendrite from an efferent or sensory neuron. As a child grows and develops, he comes into contact with a vast number of new objects with which to experiment. Each object stimulates some sense organ of the body, and these experiences are stored in the memory cells of the brain to be used for future perception. The sense organs are stimulated by some external occurrence, and the resultant impulse is transmitted to the central nervous system for interpretation or perception. Without the abilities of the brain the impulses received by the sense organs would be meaningless. Therefore, it is the brain that perceives our external world, and the sense organs are aids to this process. The sense organs are the skin, eyes, ears, tongue and nose.

The Skin

This sense organ picks up impulses from various textures, tactile stimulation to pain, and from varying degrees of temperature. It takes a different kind of nerve ending to recognize each of these sensations as each nerve can carry only its own kind of message. Various types of nerves are not evenly distributed over the body. For example, heat is detected best by the lips while the fingertips are sensitive to a very light touch.

Much of the perception of the skin is possible because of the little hairs found over the major portion of the surface of the body. Each hair fits into a cradle of nerve threads, and when it is bent, a sensation is felt. Some feelings are a combination of senses. For example, tickling is part pain and part light touch.

The Eyes

These two sense organs receive sensations by picking up light impulses which are transmitted to the brain along the optic nerve. Light comes from the sun which is a perfect blend of seven colors. Objects absorb all the colors except one, and it is this color which is seen by the eyes. In this way the brain can tell just exactly what color one is seeing. Besides detecting color, the eyes also tell the person how close things are to him or how far away they are. This is accomplished by the adaption of the lens. The eye also adjusts to varying degrees of light. Two parts of the eye are necessary for this. One is the iris or colored part of the eye and the second is the pupil or black circle, which is nothing more than an opening in the eye. The iris contracts or stretches depending on the amount of light available which in turn makes the pupil bigger or smaller. The retina, or back part of the eye connected to the optic nerve, contains two special kinds of cells called rods and cons. The cons tell color, and the rods pick up shades of brightness and darkness. The sensations picked up by the eye are important to survival; therefore, the eyes are among the best protected organs of the body. They are surrounded by bone, hair, eyelids, and fluid.

The Ears

Sound waves convey a more forceful meaning than light rays. Sound travels through space more slowly than light does, moving at a rate of 1,090 feet a second or one mile in five seconds. The vibrations that reach the ear must then be transmitted to the brain before they have any meaning. The hearing apparatus is divided into three parts. These are the outer ear, middle ear, and inner ear.

The outer ear includes the ear lobe which helps collect sound waves. These waves are much like the rings that result when a pebble is tossed in water. The external auditory ear canal connects the outer ear to the middle ear. Wax is made inside this canal and, with the help of small hairs, it keeps dust and germs out. At the end of this canal is the eardrum.

The middle ear is made up of three tiny bones which act to transmit the sound waves. These bones are the hammer, anvil, and stirrup. The stirrup eventually strikes against the oval window which is the beginning of the inner ear. In the inner ear is a structure called the cochlea. This organ changes sound waves into noises. This is possible because tiny hair cells line the channels within the cochlea and are surrounded by fluid. The stirrup strikes the window; the fluid is set into motion; the hair cells are disturbed; and the nerve fibers pick up the sound, which is then carried to the brain and perceived.

When a person has a cold, hearing is dulled because the eustachian tube has become swollen or clogged, and the proper amount of air cannot reach the middle ear. Since the canal is connected to the opening at the back of the nose, this also explains how germs can be forced into the ear to cause infection if the nose is blown too hard. The difference in air pressure between the auditory canal and outer ear which results from a rise in elevation (riding an elevator) causes the discomfort felt in the ear. Swallowing, yawning, or blowing the nose will help to equalize the pressure.

Also found on the cochlea are three rings or circular tubes. They have nothing to do with hearing, but instead give the individual his sense of balance or body position. This occurs because the rings are located on different planes. They are filled with fluid and contain oteliths (small particles of calcium carbonate) or "ear stones." When the body position changes, the fluid moves causing the oteliths to pull on the hair cells connected to nerve fibers. This stimulation results in a "righting reflex" or muscular response to restore the body to its proper position.

Smell and Taste

These must be mentioned together because of the way the nose and mouth are made. The nostrils are built out over the mouth, and both are connected on the inside. This explains why food doesn't have much taste if the nose is blocked.

The tongue, the taste organ, is covered by taste buds which respond to four different tastes. These are (1) sweetness, (2) saltiness, (3) sourness, and (4) bitterness. All other tastes are a combination of these four basic ones.

In the nose or olfactory area, smells or chemicals are brought into contact with special threadlike hairs. These olfactory cells may become "tired out" from smelling something and are fatigued toward just the particular odor they have been exposed to. This explains why some one may come into contact with an objectionable odor and eventually may remain in the same place and not notice the "smell" at all.

In addition to the senses mentioned, there are several others which are important to the perception of sensations. These include thirst, hunger, tiredness and sleepiness, nausea, dizziness, and internal pain. These senses tell the brain about what is going on inside the body while the first five inform the brain about things that are occurring outside.

All of the senses discussed would be meaningless without the body having some way of perceiving what the incoming signals mean. This is done by the central nervous system consisting of the brain and spinal cord. Impulses come from the sense organs to the central nervous system by way of thirty-one pairs of spinal nerves and twelve pairs of cranial nerves, and the proper response is sent out.

In order for the impulses to reach the nervous system, they must travel along a certain pathway or nerve, much like electricity travels along a wire. This transaction of impulses is done by the nerve cell of a spector type of neuron (nerve). This cell consists of three basic points: (1) dendrite,

(2) cell body, (3) axon. Neurons are of three types: (1) sensory neurons (afferent), (2) associative neurons, (3) motor neurons (efferent). The neurons are specialized for transmitting nerve impulses in the form of electrochemical changes.

The dendrite of a neuron is connected to a receptor or sense organ, and its purpose is to receive the initial stimulus and carry it toward the cell body. This impulse passes through the cell body to the axon. The function of the axon is to pass the conducted impulse away from the cell body toward the central nervous system. The nerve picking up the initial stimulus is known as a sensory neuron or afferent neuron which transmits nerve impulses toward the central nervous system. The impulse then travels to another nerve which is found inside the central nervous system. This nerve is known as an associative neuron, whose purpose is to carry impulses from sensory to motor neurons. The gap between neurons is called the synapse. It is not known for sure how the impulse "jumps" this space. The general theory today indicates the involvement of chemical changes. When the spinal cord or brain determines the proper response to the stimulus, the associate neuron will synapse with another type of neuron. Again the route will be from dendrite to cell body to axon. The axon of this nerve is located in a motor part of the body (such as an axon muscle) and will cause the appropriate response to be executed. This nerve is known as a motor neuron. The axon end of the motor neuron and the part of the body it is found in is, therefore, called the effector.

All of these impulses and nerve pathways are still meaningless without a basic understanding of the capabilities of the brain and spinal cord. The brain itself is divided into many parts, each performing specific functions. The parts of the brain to be considered are the cerebrum, thalamus, hypothalamus, cerebellum, pors, and medulla. It must be kept in mind that the brain is an extremely complicated structure, and science is finding out more about it every day.

Cerebrum

The cerebrum covers the whole top of the brain. It is the largest part of the human brain, and gray matter (cell bodies of neurons) arranged in folds called consolutions is found in the outside of it. It has been estimated that this layer contains ten billion nerve cells. White matter makes up the center of the cerebrum (nerve fibers). Certain areas of the cerebrum are known to be responsible for certain functions. In general, the functions of the cerebrum are mental processes of all kinds. These include thinking, willing, memory, emotions, sensations such as for heat, cold, pain, touch and pressure, voluntary control of movement (willed contraction of skeletal muscles) and consciousness. This part of the brain also includes areas for vision, hearing, and smell. Further, the cerebral cortex performs the functions of learning, memory, verbalization (ability to symbolize concepts or words), emotions, insight, foresight, and personality traits.

Thalamus

Below the cerebrum and connected with it by a slender stem or column of nerve fibers is the thalamus. This acts as a relay station for sensory impulses (with the exception of olfactory ones) on their way to the cerebral center. It is also in this part of the brain that stimuli for pain, touch, and heat and cold are felt. The thalamus determines if this sensation is pleasant or unpleasant. It cannot tell exactly where the stimulus is coming from, so it sends on the impulse to the cerebrum for such interpretation.

Hypothalamus

The hypothalamus is a small part of the brain, but it is functionally important. This part plays an important role in controlling metabolism, visceral (internal organs) activities, and body temperature. It also helps maintain the waking state and produces sleep.

Cerebellum

The cerebellum is the second largest part of the brain and is found below and to the back of the cerebrum. It functions to make normal muscle movement possible. This is possible because the cerebrum starts the action, and the cerebellum acts to coordinate the contractions and relaxation of the various muscles once they have begun. Without this action no body movement or life would be possible. The cerebrum is chiefly concerned with actions rather than sensations and appears to be an assistant to other parts of the brain without any specific functions of its own.

Pons

Just above the medulla lies the pons. This area serves as a relay station for fibers from the cerebral cortex to the cerebellum.

Medulla

The medulla is the part of the brain which attaches to the spinal cord. It is only slightly more than one inch in length and is composed mainly of white matter. This area of the brain contains a number of reflex centers necessary to life. The medulla controls such functions as rate of heart beat, respiration, body temperature, vomiting, digestion, sneezing, coughing, hiccoughing, and swallowing. These are all involuntary actions. Since the medulla contains vital centers, it is the most important part of the brain. Injuries to this part of the brain very often prove fatal.

Spinal Cord

The spinal cord is a column of nerve tissue inside the backbone of twenty-six separate bones called vertebrae. The upper end of the spinal cord connects with the brain. It is composed of gray matter on the inside surrounded by white matter. The spinal cord exercises two main functions. It serves as a pathway for the nerves as they lead to the brain and contains many reflex centers. Spinal cord injuries may be extremely disabling depending upon where the injury is and how many nerve tracts are damaged. The parts of nerves in the spinal cord and brain do not have the ability to repair themselves while the extensions of the nerve beyond these areas may be able to renew themselves.

DRUG USE AND ABUSE

Introduction

That drugs are invaluable medical aids in the treatment of diseases and in providing relief from pain and anxiety is generally recognized. It has also long been recognized that many of those same drugs have been abused to the detriment of both the individual and society.

The fact that current social changes have been accompanied by an increasingly widespread use of drugs by the young (especially marijuana and LSD), and the fact that the effect of these drugs is controversial has made more apparent than ever before the need to educate youth to the possible consequences of illicit drug use.

The educational approach to the problem of drug abuse must be to present the situation as it is: to air all sides of the subject, to supplant popular fallacies with facts, and to assess objectively the dangers involved. Preaching is not effective as an educational process and must be avoided.

Since the primary aim of this section will be to study drugs in the context of drug abuse, a common understanding of such terms as drug, drug abuse, and addiction is essential.

A drug may be defined as a substance used as a medicine or in making medicines. Drugs are used medically to relieve pain and in the treatment and cure of disease. They can function to help the body in these ways because they have the ability to act against germs or to change the rate of natural activity of the body cells. This second capability of drugs is possibly due to the way drugs affect the central nervous system. For example, a stimulant drug such as cocaine causes the nervous system to speed up cellular activity while a depressant drug, such as morphine, will cause the opposite reaction to occur. A drug, therefore, is any substance that changes the rate of cellular activity.

Drugs produce both physiological and behavioral changes in an individual. Many therapeutic drugs also have some potential for damage. They might produce a good effect in one way but not in another. They are made available by prescription when the illness for which they are prescribed justifies their use on the basis of medical judgment.

Drug abuse is defined as the use of drugs in any way that is harmful to the body. It may range from experimentation with the comparatively harmless patent medicines widely advertised by the mass media to addiction to illicit "hard" narcotics. Milder forms of drug abuse are, to an extent, a reflection of our way of life today, one that has been referred to as a "drug-oriented" culture. Advertising today tells us to take aspirin for a simple headache, Exedrin for a severe headache, or Cope for a nervous headache. One can take aspirin for a cold or flu symptoms, Dristan for measured relief from a cold, and Neosynephrin for nasal congestion associated with the common cold. Commercials advise the use of Sominex to get sleep, Alka-Seltzer to get rid of tired blah feelings upon rising or during the day, and No-Doz at any time one wishes to keep from falling asleep.

This is not meant to suggest that these drugs may not provide the relief they are said to give, but it is of extreme importance to recognize that pain of any sort is only a symptom. Pain is the body's way of signaling that something is wrong. To cover up recurring pain is to disguise the symptoms at a time when a doctor's advice may be most needed. Self-diagnosis and self-treatment are sometimes harmful habits. This practice also represents a vast waste of the precious medical dollar.

Although still far from the degree of abuse of hard narcotic addiction, a very dangerous practice in the area of drug abuse is the use of medications prescribed for someone else. Drugs are prescribed according to age, body size, and specific ailment. To take medicine left over from another's illness could be harmful or even fatal. In actual practice, no extra medicine should be left over from an illness, for it should be taken until gone. Any left-over drugs are best flushed away or burned, for even just throwing extra medicine in the garbage is a potential danger to others.

Addiction may be defined as a process during which any individual becomes dependent on a substance to the degree that it becomes difficult to do without that substance. The degree of difficulty determines the degree of addiction. Addiction can be measured somewhat by the degree to which the drug controls the person's life. It may mean psychological dependence, or physiological dependence, or both.

Psychological dependence is an attachment to drug use which arises from the drug's ability to satisfy an emotional need or a personality need. Drugs such as tobacco, alcohol, marijuana and LSD have traditionally fallen into this category of psychological dependence, although scientific evidence today indicates that if they are used extensively enough, the individual may become physically dependent on them as well. A real danger of psychological dependence lies in the recognition that it involves an emotional or mental adaptation to the effects of the drug. The abuser finds that he likes the feeling he gets from the drug and wants to re-experience it, or he believes he cannot function normally without it. To some, the drugs offer escape from reality of their problems and frustrations. To others, the drug and its effects seem to provide the answer to everything from disenchantment to personal boredom.

Physiological dependence is the adaptation of the body to the drug so that the body develops a need for it. As the body adapts to the specific drug, toleration builds so that ever-increasing doses are required. Without the drug, the user's body goes through painful withdrawal symptoms.

Unlike addiction habituation is a condition resulting from the repeated consumption of a drug, which involves little or no evidence of tolerance, some psychological dependence, and a desire rather than a compulsion to continue taking the drug for the feeling of well-being that it engenders.

Another term being used more frequently, drug dependence, is the one recommended by the World Health Organization. WHO defines drug dependence as "a state arising from repeated administration of a drug on a periodic or continuous basis.' This term would encompass both addiction and habituation. The term would be further qualified in accordance with the particular drug being used. For legal purposes, the old terms are still used while the medical field is accepting the WHO's recommendation.

Reasons Behind the Drug Abuse Problem

The major problem in drug abuse is to understand why some individuals need the aid of artificial stimulants to get along in life. In the past, slum conditions, easy access to drugs, peddlers, and organized crime were blamed for the problem. Today these conditions can no longer be accepted as an adequate explanation, for drug abuse is found in all social and economic classes. The answer to the question of why any one person tries drugs is the key to the whole problem.

Obviously all the answers are not available, but one theory is that emotional instability plays a role. Occasionally psychological disorder is involved. Some neurotic and psychotic individuals are referred to as "addiction-prone" people. At the same time it would be incorrect to say that all drug abuse involves emotional or personality disorder. Occasionally some individuals may become accidentally addicted through medical use of drugs. This, however, accounts for only 5 per cent of the cases of adult addiction in the federal hospital at Lexington, Kentucky. Once cured, these people rarely return to drugs.[1]

While it is obvious that drug abuse is not limited to any particular age group, it is equally obvious that an exploration of the reasons for addiction of the young will have special pertinence for the high school student. This limitation is, furthermore, a means of concentrating upon the major problem area in the growth of drug abuse. Typical of the statistics revealing the extent of teen-age experimentation with drugs is the police estimate that 25 per cent of suburban teens have experimented with drugs.

As the adolescent matures, society increasingly places greater responsibilities on him. He experiences a loosening of family ties, a growing away from parental authority, sexual maturation, and an increasing influence of the peer group. The teen-ager may feel anxiety, frustration, fear of failure, inner conflicts, and doubts. He may actually believe or be convinced by others that drugs will make him more socially acceptable and at ease. Others feel it is the "thing" to do, just as adults first tried smoking and drinking. Curiosity and the urge to experience new and different things also must be considered in the understanding of why teen-agers try drugs.

Teen-agers seem to be particularly susceptible to the influence of their peers. They may feel that drugs provide relief and escape from the problems of life. Further, the need to become independent may also be a factor here. For some, the abuse of drugs may be their way of defying authority and convention.

The factors behind drug abuse are not only found within the adolescent, but also in our society itself. Advertising and medical practices have convinced us that the remedy for every pain is a pill of some type. This substance itself may have little or no actual value, for expectation plays a larger role than was once realized. The individual is conditioned to believe that a "pill" will help him and is convinced that it does. Expectation may also be a factor in understanding why some teen-age drug abusers find the artificial stimuli so satisfying. The past fad of smoking banana peels is a good example of the potentials of expectation. Scientific evidence has shown that neither the banana nor its peeling have any chemical substance which could affect behavior.

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[1] Vogel, Victor H., and Vogel, Virginia E. Facts About Narcotics and Other Dangerous Drugs. Chicago: Science Research Associates, Inc., 1967, p.35.

Our society in general is filled with anxiety and everyone seems in a rush to cure all the ills of our culture immediately. We also pressure our young people toward greater achievements and many adolescents get the message that they will be failures unless they graduate from high school and are admitted to a "good" college or university. In effect this means extending the period of adolescent dependence upon parents and the denial of several basic needs and drives. The extension of the dependency periods tends to encourage rebellion by our young.

Sometimes a group of students in a school setting will carry this rebellion to the point where they identify themselves as users. They might form strong bonds to protect their secret behavior. Actually, they are playing a game of "cops and robbers" to conceal their illegal actions.

With all these pressures in life, it is almost understandable why a teenager might find fascination in the philosophy of "turn on, tune in, and drop out."

Organized formal religion no longer plays an important role in the lives of many young people who now have to look elsewhere for answers to such questions as, "What is my purpose in life?" and "Who am I?" Our society also appears incapable of providing adequate answers for our problems. Therefore, the idea expounded by Dr. Timothy Leary that LSD provides instant wisdom through its mind-expanding capabilities naturally holds a lure to the soul-searching individual.

We must all realize that problems are solved by facing them head on. Realism, objectivity, sensitivity, and a sense of responsibility would seem to hold at least a partial answer to the problems facing man. Youth must come to realize that truth can emerge through actual confrontation with a problem and hard work can go a long way toward a solution of society's ills. The abuse of drugs provides only an escape from reality and a sound honest educational approach of presenting the facts about drugs without preaching seems to be the only way we can show them that this is so.

The Process of Abuse

The abuser is usually introduced to drugs by "friends." The use of alcohol may sometimes pave the way for experimentation with drugs.[2] The individual involved with drugs is generally not stupid or uneducated for some abusers have above average intelligence and may be well educated.

Authorities disagree on whether or not it is possible to discover a drug abuser by visual means. This is due to the fact that many of the outward physical characteristics are also symptoms of other ailments. Therefore, no one should ever attempt to categorize anyone as a drug user on subjective judgment alone.

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[2] Smith, Kline and French Laboratories. Drug Abuse: The Empty Life. Philadelphia, 1965.

Drug abusers fall into three categories: (1) those who use drugs for specific situations, such as using amphetamines to stay awake to prepare for an exam, (2) the "spree" user usually of high school or college age who uses drugs just to provide "kicks," (3) the hard core addict whose activities revolve almost entirely around drugs. Transition from one category to another takes place when the drug becomes a means of solving or avoiding personal problems.

Drug Abuse and the Law

No potential drug abuser should ignore the fact that the use of certain drugs is illegal. Abusers may feel that the laws are too strict, but they are on the books nevertheless. Anyone caught abusing drugs, even for the first time, could be fined and/or imprisoned, put on probation, or at the very least end up with a police record. This record will exist for the rest of the individual's life. The police record in and of itself will prevent the offender from ever having the opportunity of entering certain professions. This could be a factor in the acceptance or rejection by medical schools, law schools, or other graduate schools. A police record is also reason for rejection for employment by government agencies.

Everyone should recognize the naivety of flouting the law as a means of producing changes in the law. If one is against the law, it is still necessary to regard it as binding until changed. Laws do change and will continue to do so, but the only positive approach is through proper legal channels.

For their own protection students should know the principal laws as they pertain to the possession, use, and selling of drugs. Ignorance of the law is no excuse for illegal acts.

Laws Pertaining to Narcotics Traffic

The chief federal law is still the Harrison Act of 1914. Another important law is the Marijuana Tax Act of 1937 (although marijuana is not a narcotic it comes under similar controls). These two laws and their amendments place severe penalties on illegal buyers and sellers.

The Harrison Act and other federal narcotics laws provide for:

1. Registration of individuals and firms which manufacture, buy or sell narcotics.

2. Special tax on narcotic buyers and sellers.

3. Required special record-keeping of those dealing with narcotics.

4. Provision for severe penalties for illegal sale or possession of narcotic drugs.

Penalties under these laws are severe. Illegal sale of narcotics can result in a $20,000 fine and a 5 to 20 year prison term for the first offense. Further offenses call for the same fine and a 10 to 40 year prison term. When the sale of heroin is made to a person under 18, no parole or probation is permitted the seller even on the first offense, with the possible penalty of life imprisonment or even death.

For illegal possession of narcotics the offender could be fined and/or imprisoned for 2 to 10 years on the first offense, 5 to 20 years for the second, and 10 to 20 for subsequent offenses. No parole or probation is possible after the first offense.

Individual states also have their own laws regarding narcotics, and while the penalties may vary from state to state, in general their laws conform closely to the federal law.

Laws Pertaining to Depressants and Stimulant Controls

The primary federal law pertinent here is the Drug Abuse Control Amendment of 1965. This amendment was endorsed by President Lyndon B. Johnson and passed almost unanimously by Congress. Under this law (1) wholesalers, jobbers and manufacturers of controlled drugs must register annually with the Food and Drug Administration and keep records of controlled drugs, (2) those regularly dispensing and changing for controlled drugs must keep records of all transactions. It prohibits (1) refilling a prescription of any of these drugs more than five times or later than six months after it was originally written, (2) manufacturing, processing, and compounding the designated drugs, except by registered drug firms, (3) distributing the designated drugs to persons not authorized to receive them by federal or state law.

Penalties under this amendment can be a $1,000 fine or up to a year in jail or both. Subsequent offenses can be punishable by a $10,000 fine, three years in jail, or both. Selling these controlled drugs to anyone under 21 years of age can result in a fine not in excess of $5,000, two years in prison, or both for the first offense. Any subsequent offenses may result in a $15,000 fine, six years in prison, or both.

Classes of Drugs and Their Effects

Drugs are divided into various categories according to the effects they have on the body. The accepted categories used today are (1) narcotics, (2) depressants, (3) stimulants, (4) solvents, and (5) hallucinogens.

Narcotics. Medically defined, these are drugs which produce insensibility or stupor due to their depressant effect on the central nervous system. Narcotics may cause sleep or mental or physical inactivity, alter perception of pain, and in large dosages, result in stupor, coma or death. This category includes the opiates: opium, morphine and heroin; mepheridine and methadone; and coco leaf and its derivative, cocaine. The last two drugs are stimulants but are included in the narcotics category for law enforcement purposes. All other drugs susceptible to drug abuse are non-narcotics.

Opium and Its Derivatives. The opiates are among the most valuable drugs available to the physician because of their ability to relieve pain. These drugs depress the central nervous system to produce drowsiness, sleep and a reduction in physical activity. Side effects can include nausea and vomiting, constipation, itching, flushing, constriction of pupils and respiratory depression.

The appeal of the opiates for abuse purposes lies in their ability to reduce sensitivity to both psychological and physical stimuli and to produce a sense of euphoria. These drugs dull fear, tension, or anxiety. The user generally becomes lethargic and indifferent to his environment and personal situation.

Chronic use of these drugs may lead to both physical and psychological dependence. Tolerance develops and ever-increasing doses are required in order to achieve a desired effect. As the need for the drug increases, the addict's activities become increasingly drug-centered. When the supply is cut off, withdrawal symptoms may develop. The intensity of withdrawal symptoms varies with the degree of physical dependence.

Opium. Opium is a dark brown or black tarry gum obtained from the congealed milky juice of the unripe seedpod of the opium poppy. It has a faint odor and a bitter taste. Most opium poppies are raised in India, Turkey, Laos, Iran, Russia, Yugoslavia, China, Burma, Thailand, and Mexico. The poppies thrive in a hot climate with little rain where few other profitable crops will grow.

Opium is eaten, drunk, or smoked. It causes dreamy stupor, sleep or unconsciousness. Opium is rarely abused in the United States but it is a popular drug in some other countries where opium dens are part of a way of life.

Morphine, heroin and codeine are derived from opium and this is what makes it a valuable drug today. A pound of raw opium purchased in another country for $25 and refined into an ounce of heroin may retail for almost $1,000 in the United States. Other preparations of opium such as paregoric (medicine for diarrhea) are sometimes used to excess by addicts and therefore such substances can be purchased only through a physician's prescription.

Morphine. This is a fine white feathery powder derived from opium. The powder is bitter and is about ten times as strong as its parent substance. Small doses relieve severe pain; larger amounts put the patient to sleep, while overdoses can produce unconsciousness and even death. Except in incurable cases, such as advanced cancer, doctors try not to use morphine for very long since it is highly addictive. Morphine should be taken only on the order of a physician. Sold in a capsule or packet form, morphine is most frequently taken by injection either subcutaneously or directly into the vein. Almost immediately after injection the person becomes drowsy and relaxed with a mild itching and tingling. Gradually he enters a state of reverie. Soon this state of euphoria is reached only by larger injections of the drug. Thus the addict builds up his tolerance for the drug as well as his dependence upon it. As this tolerance builds up, the addict becomes comparatively immune to the toxic manifestations of the drug. With morphine, for example, the tolerance may become as high as seventy-eight grains in sixteen hours - a dosage large enough to kill as many as twelve or more unaddicted persons. The therapeutic dosage of morphine given in hospitals is usually considered to be about one grain in the same period of time.

Heroin. This drug is also made from opium and is a white crystalline powder resembling morphine. It works like morphine but is more than twice as strong. A law passed in 1925 made heroin illegal for any purposes in the

United States since morphine is as effective for medical purposes.

Heroin is manufactured in Italy, Turkey, France and Germany; for sale in countries where it is still legal. Some of this is smuggled into the United States for sale to addicts in capsule form. Due to increasing pressure by law enforcement authorities, supplies have tended to contain increasingly low percentages of the active ingredient. As a result many addicts experience relatively mild withdrawal symptoms. If the addict were to get heroin stronger than his usual supply, he would likely die from an overdose, which produces virtually immediate lung congestion. Addict deaths from overdosage at a rate of one per day have been reported in New York City.[3]

An addict usually starts by sniffing the drug into his nostrils. To get the full effect, he may soon start "needling," and becomes what addicts call a "main-liner." This means he is injecting it into a vein with a hypodermic needle. Tolerance builds up rapidly and the addict suffers physical pain when he cannot get the drug. To support their habit, the addicts, if they are men, turn to petty stealing and holdups to get money for more drugs. Women addicts often become prostitutes.

It should be emphasized that we are not in a period of increasing heroin abuse. The problem is that we have been unable to decrease existing numbers during the past several years. There is virtually no heroin problem in our colleges, but it is found among high school dropouts and in areas of decay within our large cities.

Heroin addicts are not given to violence and most of their crimes are against property. In a study involving 500 addicts, it was found that only 4 had been convicted of armed robbery and 496 were arrested for non-violent crimes. Sixty-seven had been arrested for shoplifting.[4]

Paregoric. This is a liquid preparation containing an extract of opium used to counteract diarrhea and to relieve abdominal pain. It is reasonably safe and free of addiction liability but can be abused when consumed in large quantities.

Codeine. This drug is found in formulas used to combat the symptoms of respiratory disorders. The chief use of codeine is for pain relief, but it is also an effective cough suppressant when taken in small doses.

High school students have been known to abuse both paregoric and codeine. To experience any effect they would have to be consumed in large doses. Even then the effect may be partially due to the high alcohol content (up to 40%) found in the formula.

Coco Leaves. The coco bush grown near the Andes of South America and its leaves are chewed by Indians living on the high plateaux. The Indians who use these leaves receive only enough cocaine to still their hunger pangs and help them forget fatigue. This is a way of life for them and not drug abuse as such.

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[3] Smith, Kline and French Laboratories. Drug Abuse: Escape to Nowhere. New York, H. K. Simon, 1967, p.31.

[4] Judge Wendt, Seminar Program on Psychedelic Drugs and Narcotics.

Cocaine. This drug comes from the coco plant and is one of the most violent stimulants known to man. Its use has diminished both medically and illicitly whereas once it was one of the most highly abused drugs. This drug encourages euphoric excitement, hallucinations, and paranoid feelings in the user. In some cases, cocaine is combined with heroin. No physical dependence or tolerance develops and therefore no violent withdrawal symptoms result with the cessation of use although the user may feel depressed without the drug and the hallucinations may persist for some time. Any reference to cocaine addiction other than that of the purely mental type is incorrect.[5] Strong psychological dependence leads to its chronic misuse.

Cocaine has serious damaging effects on the individual. The drug's psychological effects are that it violently stimulates the individual, gives him an exaggerated feeling of muscular and mental power, and for some unknown reason, unleashes paranoid feelings, i.e., a profound fear that someone or something is out to destroy the individual. The most dangerous reaction of a paranoid is to counterattack the supposed enemy. This naturally can result in violence. The physical effects of cocaine are such as to cause digestive disorders, sleepiness, overexcitability, and convulsions.

Cocaine is classed as a narcotic for legal purposes and its use and sale are illegal. The drug can be used as a local anesthetic to deaden pain without adverse side effects. Novocaine and procaine are useful relatives of this drug.

Treatment of Narcotic Addiction

Prevention is the best treatment of addiction, but if it does occur treatment can be effective. Today the addict is viewed as a sick person and he must be placed under close supervision while undergoing treatment. The process of treatment cannot be effective in a doctor's office, for, with the first signs of withdrawal, the addict will do anything to get more drugs. Treatment must therefore be in an institution or specialized hospital. The United States maintains two such hospitals, one in Lexington, Kentucky, and a second in Fort Worth, Texas.

The average length of time in the hospital is four months although many must remain longer to be treated successfully. The steps in treatment involve withdrawal, rehabilitation and re-education. Oftentimes the patient will undergo psychotherapy individually or in a group as an aid to his recovery. When the addict is discharged he may, as many do, immediately return to drugs. This occurs because he may have retained his psychological dependence and will tend to go back to the same social setting from which he came originally. This is to his disadvantage because that culture includes all those elements which led him to addiction in the first place.

Large cities have agencies which are interested in helping past addicts who wish to stay off drugs. Some of these are the YMCA, YWCA, and various church and welfare agencies. Recent developments have included the establishment of half-way houses by religious organizations for addicts and alcoholics. There is also a group called Narcotics Anonymous, founded in 1947, which is patterned after Alcoholics Anonymous, that seems to be having some success in helping former addicts. The controversial project called Synaron also has had some favorable results along this same line.

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[5] Drugs, World Health Organization, July 1967, p.8.

Another approach to the problem of drug addiction has been the British system under which a physician may prescribe maintenance doses for the uncurable addict. Even this system has not been foolproof and there has been a rise in drug addiction particularly among young people in that country. The recommendation has now been made in Britain to establish special centers for addiction treatment.

In the United States, the Rockefeller Institute has initiated the methadone program which maintains addicts on the synthetic narcotic called methadone. The addict is given this substance daily for as long as is necessary. This is a rather controversial experiment for it could involve maintaining an addict for the rest of his life. One factor acting in favor of this program is that it allows past addicts to pursue useful lives and ends the necessity of their turning to crime to support their habits.

A complete cure is not easy but it can be achieved. At the present time of all the addicts treated at the federal hospitals, 36 per cent have been there more than once.[6] It is recognized that known treatments for addiction are not completely effective. Continuous efforts are being made to find more successful means.

Central Nervous System Depressants

This category of drugs includes those which depress or slow down the central nervous system. Within this group of commonly abused drugs are the barbiturates, tranquilizers, sleeping pills and alcohol. In general these drugs, when used in moderate quantities, relieve pain and anxiety, cause mental and physical relaxation, and usually produce sleep. They have a numbing effect on consciousness and in larger doses produce stupor, coma, and may cause addiction. Some of the general effects of these drugs are a decrease in the control of behavior, loss of inhibition, loss of social control, disturbance in the fine coordination of motor movements, and inducement of sleep.

Barbiturates. These drugs are among the most useful drugs in medicine today. They are used in the treatment of epilepsy, high blood pressure, insomnia and for certain mental disorders. Under proper usage they are impressively safe and effective. Misuse causes about 5,000 deaths in the United States per year.[7] Barbiturate intoxication accounts for 25 per cent of all acute poisoning cases admitted to general hospitals. These deaths result mostly through overdoses and ignorance about their toxicity. A very important fact is that indulgence in alcohol before taking barbiturates can result in fatal depression of the respiratory and cardiovascular systems.

Among abusers, barbiturates, commonly called sleeping pills, are known as goofballs, and since they are sold in colored capsule form are often called

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[6] "Facts About Drug Addiction," p.13.

[7] Birnbach, Sidney B. Drug Abuse: A Dead-End Street. H. K. Simon, 1967.

"yellow jackets," "blue angels," "pink ladies," or "red devils." The abuser exhibits slurred speech and staggering gait. His reactions are sluggish and he is emotionally erratic, being easily moved to tears, laughter, or irritability and antagonism. The goofball addict is dangerous to himself and others because of impaired judgment, slow reaction time, and generally lowered intellectual functioning. This makes the barbiturate addict particularly dangerous when driving a car.

Chronic misuse of barbiturates may be accompanied by the development of both psychological and physical dependence. Barbiturate abusers can be far more dangerous than alcohol or even narcotic abusers. Abrupt withdrawal is extremely dangerous, involving convulsions and/or a failure of muscular coordination. There may also be a period of mental confusion with delirium and hallucination similar to the delirium tremens of alcoholism.

The barbiturate problem today is far greater than previously estimated and the illegal use and abuse of these drugs has been spreading, particularly among young people. Abuse of barbiturates is far more frequent among high school age youth than the college age. This situation seems to be the result of the latter group's awareness of the dangers involved which gives them little reason for experimentation. Unlike marijuana the facts proving the dangers of barbiturates are well established and documented. Abuse of these drugs would seem to be through ignorance, rather than through any pretense at experimentation.

Tranquilizers. These differ from barbiturates in that they can be used to counteract tension and anxiety without producing sleep or significantly impairing mental and physical function. When chronically abused, to the point involving increasingly larger daily doses, physical and/or psychological dependence may result. Symptoms and withdrawal are much like those seen with barbiturates. Common tranquilizers such as Equanil, Librium, Miltown, Plocidyl, and Valium, can be dangerous if taken without medical advice.

Central Nervous System Stimulants

This category includes those drugs which speed up the central nervous system or produce the opposite effect of the depressants. They tend to prevent sleep and to produce excitement in the user. A common stimulant which is socially accepted is caffeine, an ingredient found in coffee, tea, cola, and other beverages. The effect of this stimulant is relatively mild and does not constitute an abuse problem. Cocaine and amphetamines are the drugs of abuse in this category. Cocaine, also classified as a narcotic, has been discussed in that section.

Amphetamines. These drugs, available under such trade names as Benzedrine, Dexedrine, and Triamine, have wide application in medical practice. They are prescribed for persons seriously overweight, for they decrease the appetite; they relieve mild cases of depression, such as those associated with menopause, convalescence, grief, and senility; they are used to treat narcolepsy (uncontrolled sleeping spells), and Parkinson's syndrome (rigidity of the muscles).

Amphetamines have been commonly called "pep pills" for they give the user a false sense of increased mental and physical abilities and heightened emotional feelings. They seem to increase alertness, temporarily erase fatigue, elevate the mood, induce mental and physical excitation, and release normal inhibitions. The effects of amphetamines on the body are such that they may produce a temporary rise in blood pressure, palpitations, dry mouth, sweating, headache, diarrhea, pallor, dilation of the pupils, insomnia, talkativeness, restlessness, urinary frequency, and tremor of the hands. They seldom cause death even in acute overdosage.

Amphetamine abuse does not produce physical dependence or any characteristic withdrawal upon discontinuation. Psychological dependence happens frequently and is the reason for continuance or return to amphetamine abuse. Slight tolerance to the drug can occur and excessive use often brings on hallucination.

These pills are used fairly frequently by college students while cramming for exams or to improve their ability during exams. The amphetamines do not have this capability and anyone using the drug for such purposes may be doing himself real harm academically. One student, after taking a stimulant spent an entire exam period writing his name over and over, and another wrote gibberish for the two hours. In one experiment seventy-eight college students were given amphetamines before a sixty minute math test. They all felt alert and thought they had done well. In reality, they all did considerably below their normal performances.[8] Amphetamines appear to impair rather than improve physical ability and mental judgment.

The use of pep pills to ward off sleep and fatigue is also dangerous because it eliminates nature's warning that we need rest. Sudden collapse could result from total fatigue. This could be fatal if the person were using the drug to stay awake while driving.

Much of the abuse of amphetamines occurs among emotionally frustrated people seeking thrills. The abuser may even alternate a stimulant drug with a depressant one. This is flirting with danger as the result may be mental disturbance ending in serious chronic mental illness or possible death from drug poisoning.

Young people are also very fashion and weight conscious, which make them easy prey for the doctor who prescribes various drugs in a weight reduction program. The amphetamines do have a legitimate medical place in treating the obese individual, but the use of drugs is not the answer for the person who wants to shed a "few" pounds. Anyone wishing to diet should see a reputable doctor before beginning any weight reduction plan.

Methedrine. The slang term for this drug is "speed." It is a stimulant drug belonging to the amphetamine group. When taken intravenously the drug can cause violent crimes or the death of the user. Its effect is such that it increases the heart rate, pulse, and blood pressure. Taken intravenously, the drug causes "flashes" or sudden bursts of energy which last from thirty seconds to two minutes. Some people literally go out of their minds on "speed." Even the hippies have worn buttons warning each other that SPEED KILLS.

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[8] Vogel, Victor H., and Vogel, Virginia E. Facts About Narcotics and Other Dangerous Drugs. Chicago: Science Research Associates, Inc., 1967, p.22.

Solvents. Non-drug substances often abused include plastic cements, glues containing benzene, toluene, carbon tetrachloride (deadly), ethyl alcohol, ethyl acetate, gasoline, ether, cleaning compounds, lighter fluid, paint thinner, and kerosene. Inhalation of these substances will produce a form of intoxication. Most of this sniffing is done by youngsters between 10 and 15, and occasionally, up to 18 years. The effects on the body are excitation, exhilaration, blurring of vision, ringing of the ears, slurred speech, staggering, and hallucinations. This period of 30-40 minutes is followed by an hour of drowsiness, stupor, or unconsciousness. One young girl was found dead in her room because she had put her head inside a plastic bag to increase the effect of fumes and had suffocated when she lost consciousness.[9] Upon recovery, the user may not recall what happened during the period of intoxication.

This is a relatively new area of abuse and medical and scientific knowledge about the long lasting effects of these substances is continually being accumulated. At this time it does not appear that any physical dependence occurs from solvent inhalation. The tendency to increase the amount inhaled suggests that tolerance builds. Many of the ingredients found in these solvents are known to be damaging to the kidneys, liver, heart, blood and nervous systems, and in some individuals, cause a severe form of anemia. Although the direct connection between inhaling the ingredients and such damage has not been concretely established, it does remain a distinct possibility.

Since the users of these substances are so young, great concern has arisen over this problem. It does seem that the chronic abuser has some emotional need to continue in this practice and psychiatric treatment is often needed to uncover the reasons for this behavior. One case tells of a 15 year old farm boy who inhaled gasoline fumes despite constant efforts on his parent's part to break him of the habit. His body was finally found drooped over a can of gasoline he had been sniffing in the barn.[10] "Sniffers" often become juvenile delinquents and even non-delinquents are lead to bad company and the possibility of progressing to dangerous drugs or narcotics. Sniffing often provides the basis for addictive behavior in an individual. The American Social Health Association says that one danger is that some sniffers graduate to "hard" drugs.[11]

Hallucinogens. The last category of drugs to be considered in drug abuse are those that distort the perception, cause dream images and hallucinations; they are the hallucinogens. At present none of these drugs has any general clinical medical use except for research applications. It is this category of drugs that is being abused at the greatest rate of increase.

Marijuana. There is no question that marijuana is the most widely abused drug among young people. It is also the most controversial, for many say it is harmless, or is at least less harmful than alcohol. Others say it is a very dangerous substance. There are those who feel the legal penalties against it should be less severe or even that the use of the drug should be made legal.

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[9] Vogel, Victor H., and Vogel, Virginia E. *Facts About Narcotics and Other Dangerous Drugs*. Chicago: Science Research Associates, Inc., 1967, p.24.

[10] Birnbach, Sidney B. *Drug Abuse: A Dead-End Street*. H. K. Simon, 1967, p.14.

[11] *Today's Health*, The American Social Health Association, May 10, 1967, p.10.

This debate is likely to continue for a long time, for medical, psychological and legal experts are still looking for concrete facts about the drug. Some information about the drug is available, and it is to be hoped that young people of today can use this knowledge to make an intelligent decision about whether to use the drug or not.

The best educational approach would appear to be one in which we let the youth know that we also are fully aware of the paradoxes surrounding marijuana. The information given in this section will attempt to summarize the present day information about marijuana.

Marijuana is derived from the hemp plant, its potency varying with the geographic location in which it is grown, time of harvest, plant parts used, methods of preparation, and individual smoking style. This variance of potency means that the drug could be weak or dangerously strong, as in the case of hashish. The individual user has no way of knowing the strength of the next reefer he is going to smoke; nor does he know if it contains any marijuana or not.

The drug is usually inhaled by smoking a hand rolled cigarette twisted at both ends called a "reefer." Slang for these cigarettes are "pot," "tea," "hay," "grass," or "weeds." Marijuana is not a narcotic and in the variety most widely distributed in the United States doesn't induce the violent behavior often associated with hashish.

Marijuana smoking was probably first imported from Mexico soon after 1900. Most marijuana sold illegally in the United States continues to come from Mexico. The price is not extravagant and even the best, which comes from Morocco, Mexico, Panama, and Columbia, never costs more than $25 to $50 an ounce. On the West Coast the milder "grass" can be had for as little as $7.50 per ounce. An ounce produces 80 to 100 cigarettes, which will last the devoted smoker a month or so. The low cost of the drug may be one reason for its popularity.

Marijuana is one of the hallucinogens, which means it has the ability to produce a state of intoxication or hallucination. Its most potent form can produce effects similar to those of LSD. This form of intoxication can warp judgment and release inhibitions. Due to this, it is possible the use of this drug could result in antisocial behavior.

The usual effect of marijuana is giggling accompanied by a distorted sense of time and space. Sometimes there is an exaggerated feeling of power although there is generally no violence or trouble at the pot party itself. These effects vary with the smoker, his mood, physical condition, and surrounding circumstances. The effect of group expectations is enormous, and what the group expects beforehand can cause a certain behavioral result to occur. The same dose affects different people differently and can even give the same person various kinds of "highs." There are usually no unpleasant after-effects from the use of this drug, no build up of tolerance, no physical dependence. Psychological dependence can develop and become a serious problem. The degree of psychological dependence appears to develop in relationship to the user's appreciation of the drug's effects.

Many of the critics of marijuana say it is the danger of the development of a distorted sense of time and space that makes the drug dangerous. An example of time distortion can be seen in the case of a mother who thinks she fed her infant within the last hour when it actually had been seven or eight hours since the last feeding.[12] Due to the fact that marijuana results in impaired judgment, vision, and reaction to speed, driving and marijuana just don't mix. Those who say marijuana is no more harmful than alcohol reply to this that the same thing happens to the person under the influence of alcohol. This is true. The point here is that neither the marijuana user nor drinker should drive.

The physical effects of marijuana include dizziness, dry mouth, dilated pupils and burning eyes, urinary frequency, diarrhea, nausea and vomiting, and hunger, particularly for sweets.

According to Dr. Katherine Hess, former Narcotics Coordinator for the New York City Health Department, some evidence exists which implies that excessive use of marijuana may cause brain and lung damage.[13] Since the synthesis of the chief intoxicant in marijuana - tetrohydrocannabinol (THC) - has been developed, some data has been gathered which indicate that the drug can lead to psychosis. The Federal Addiction Research Center at Lexington, Kentucky has conducted experiments with THC which show that it can cause a psychotic reaction in every case.[14] Studies done in the Harvard Medical School have indicated the same result.[15] These psychotic symptoms may include paranoia. Continuous use can also irritate the eyes and lungs, particular risks for users with eye trouble or pulmonary conditions such as asthma or chronic bronchitis.

Repeated studies have failed to show any direct correlation between marijuana use and major crimes. As for sexual desire or the energy to pursue it, the drug is just as likely to diminish as to enhance it.

The statement has been made in the past that marijuana leads to heroin addiction. Young people can sense the hypocrisy of such a statement, for they can look around them and see many examples of where this is not the case. The fallacy here may be nothing more than misinterpretation; for obviously, marijuana in and of itself does not cause heroin addiction. It is known, however, that the vast majority of heroin users started on marijuana. One estimate stated that 90 to 95% of all drug addicts start by smoking marijuana.[1 It would therefore appear that this drug often does serve as a preliminary to the taking of stronger drugs. This is not because of the drug itself, but because of the association with social groups and subcultures involved with more dangerous drugs such as the opiates or barbiturates. Naturally it is evident that anyone experimenting with any type of drug could like the effects so much that he intentially searches for stronger drugs to either speed up or enhance these feelings. In this way also marijuana could act as a precursor to narcotic addiction, especially when the abuser is psychologically drug-bound.

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[12] George, Demos D., Shainline, John W., and Thomas, Wayne. Drug Abuse and You. New York: Chronicle Guidance Publications, Inc., 1968, p.10.

[13] Ibid.

[14] Ibid.

[15] Chicago Daily News, June 20, 1968, p.23.

[16] Birnbach, Sidney B. Drug Abuse: A Dead-End Street. H. K. Simon, 1967, p.10.

Continuous use of marijuana may make users feel that they are getting closer to reality. Judged by any conventional standards these same people tend to become irresponsible and uninterested in things like pursuing studies, keeping a job or supporting a family. There is not at this time much evidence to prove detrimental effects on an individual's physical health but its psychological dependence may lead to extreme lethargy, self-neglect and preoccupation with the use of marijuana. This type of situation leaves little room for constructive activity. The World Health Organization in 1965 stated: "The harm to society derived from abuse of cannabis rests in the economic consequences of the impairment of the individual's social functions and his enhanced proneness to asocial and antisocial behavior."[17] One doctor was quoted as saying that pot-heads become social bums.[18] Herein seems to lie the greatest danger of chronic use of marijuana. Its long range effects are social in nature frequently leading to a drop-out philosophy.

Mescaline. This substance comes from the Mexican cactus, peyote. Peyote has been used for centuries in some Indian tribes in their religious ceremonies because it produces colorful hallucinations believed to be mystical visions. It can be obtained in powder, liquid, or "button" form. A recent ruling has made the use of peyote legal for those members of the Native American Indian Church recognizing its use as a part of their way of life.

Psilocybin. This drug comes from certain mushrooms found in Mexico. It also has been used in Indian religious rites. It is not as potent as LSD but can produce hallucinogenic effects.

DMT. This is a chemical rival to LSD, but it is less potent. The proper name for this synthetic drug is dimethyltryptamine. Large doses of it are required for any effect. A "high" on this drug ordinarily lasts less than an hour and has been called a "businessman's trip."

Nutmeg. This spice has long been a secret hallucinogen used by prison inmates. It produces an effect similar to a marijuana high. A nutmeg trip may be accompanied by drowsiness, nausea, constipation, and followed by an unpleasant hangover. A very large quantity of this substance would have to be used to experience any effect at all.

Morning Glory Seeds. Some varieties of these seeds can also produce hallucinations if taken in large enough doses. Seed producers became aware of this form of drug abuse over inordinately large sales. Producers now discourage this practice by spraying the seeds with a nausea-producing chemical.

Aromatic Clove Oil. Toothpicks were soaked in this substance and chewed. This form of abuse was vogue a few years ago. Chewing these toothpicks had a mild stimulant effect but it also produced blisters in the mouth.

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[17] Smith, Kline and French Laboratories. Drug Abuse: Escape to Nowhere. New York: H. K. Simon, 1967, p.40.

[18] "Marijuana: Millions of Turned-On Users," Life, Vol.63, No.1, July, 1967, pp.17-23.

STP. This drug causes hallucinations like those of LSD but they last longer. LSD's effects last 8 to 12 hours while STP's may last for four days. STP acts on the nervous system and can cause arrested breathing, irregular heartbeat, intestinal disturbances, and severe mental distortions. The tranquilizer used to calm a bad trip of LSD only makes the effects of STP worse.

LSD. Lysergic acid diethylamide is a white, tasteless, odorless chemical. It was first synthesized in 1938 from ergot, a fungus that grows on rye. It comes in the form of a white pill, powder in capsules, impregnated in sugar cubes, cookies, or crackers. The drug affects the central nervous system and produces changes in mood and behavior. The pupils may dilate, the temperature and blood pressure rise, and body may exhibit hyperactive reflexes. Tolerance to the behavioral effects of LSD may develop with several days' use. No physical dependence occurs and if psychic dependence develops it is seldom intense, and therefore users will not experience strong cravings for the drug if it cannot be obtained. Despite the fact that this drug does not appear to be an addictive type, the effects on the mind are entirely unpredictable.

The LSD experience consists of changes in perception, thought, mood and activity. There may be bursts of laughter or no show of any emotion at all. It could result in a feeling of being alone which can lead to anxiety, fear and panic. People on LSD sometimes believe they have the power to fly or walk on water. Therefore, for some, LSD is not merely dangerous but lethal. Many feel that taking LSD improves their creativity, but this feeling rarely creates any objective results. After many hours the effect of the drug begins to wear off, but psychological changes can persist for indefinite periods and many users have experienced the recurrence of symptoms months after taking the drug.

There is no approved general medical use for LSD although it was once thought to be a miracle drug which could treat chronic alcoholism and certain types of mental illness. Most medical research on these possibilities are at present inconclusive. Today the Food and Drug Administration feels LSD has no clinical utility and consequently the drug is subject to controls. Given time the facts on the drug will be discovered.

Lack of patience or inability to wait until the facts are in could have disastrous results for the present users of LSD and even their future offspring. The cultists of LSD may vehemently extol its benefits but no one can refute the rapidly accumulating evidence of the side-effects of the drug. It may be true that some individuals have had LSD experiences without apparent ill effects, but it must be remembered that each individual reacts differently to artificial stimuli. According to Dr. James L. Goddard, Commissioner of Food and Drugs, the medically unsupervised use of LSD is like playing "chemical Russian roulette."

Adverse Effects of LSD

1. Hospital admissions of persons with acute LSD-induced psychoses are on the increase. Psychotic states have been induced by this drug. Panic, fear, homicidal and suicidal urges have been reported. Casualties have happened to users even when the drugs were taken under supervision.

2. LSD sometimes produces terrifying visions that lead to serious mental derangement and hallucinations have recurred up to a year after use of the drug.

3. Authorities report that one-third of the people taking LSD report unpleasant emotions and sensations, and about one-half of these persons experience panic and fear that they are losing their minds.[19]

4. There is a possibility that repeated LSD trips can impair the intelligence. A study done by Dr. Sidney Cohen, psychiatrist at Wadsworth Veterans Administration Hospital, reported to the American Medical Association that a comparison of 30 persons who had taken LSD 50 times with 30 non-users matched for age, sex, and educational level revealed no evidence of organic brain impairment, but it did reveal that special orientation was impaired and that there was an inverse relationship between general intelligence and the number of LSD exposures.[20]

5. Evidence is mounting to indicate that LSD can damage chromosomes. No one has yet proven that LSD breaks chromosomes except in test tubes. Blood samples from non-LSD users show 4% to 5% damaged chromosomes. LSD users show a 19% damage.[21] The failure to substantiate conclusively this evidence lies in the fact that we are dealing with human subjects and not laboratory animals.

No one seems to know if actual deformities will result from such chromosome breakage but recent reports seem to support this theory. It is known that if rats are given LSD early in their pregnancy their offspring are usually stillborn or malformed. In one study five rats were given LSD and only one had an apparently normal litter.[22] Malformed babies have been born to LSD mothers, but thus far a cause and effect relationship has not been established.

6. LSD can also damage the chromosomes in each body cell found in the body causing them to divide in abnormal ways. The State University of New York Medical Center in Buffalo dealt with a mental patient who had taken LSD for six years. This individual was found to have a high rate of chromosome damage resembling that seen in some tumor cells and in patients with a severe form of anemia.

Along this same line the University of Oregon Medical School at Portland studied eight male users and found that six of them had broken chromosomes. Two of the six, by far the heaviest users of LSD, had the chromosomal abnormality that seems to be identical to one seen only in the first irreversible stages of leukemia. There have also been some reports of epileptic seizures being brought on by the use of LSD.

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[19] Vogel, Victor H., and Vogel, Virginia E. Facts About Narcotics and Other Dangerous Drugs. Chicago: Science Research Associates, Inc., 1967, p.26.

[20] Chicago Daily News, Spring of 1968, Author: F. Sneider.

[21] Time, September 15, 1967, p.85.

[22] Time, August 11, 1967, p.60.

7. There is a large amount of already extensively documented history of psychiatric damage with users ending up in mental institutions. Some of these people have become mentally ill after only two doses of LSD.

8. LSD is not the drug of great scientific value it was once thought to be. Projects dealing with the treatment of alcoholism and neurosis are being conducted. It does not appear that LSD will ever be widely used for such purposes. Almost every controlled research project has defaulted the scientific value of LSD. The Missouri Institute of Psychiatry tried treating 150 severe schizophrenics with the drug and none of them got any better, in fact three became worse after this treatment.

9. Dr. Cohen investigated the claim that LSD helps people become more creative. In this study 24 volunteers used LSD and it was found that while they all felt they were creating far better than before, objective analysis of the work showed they were doing the same as before or worse.

10. LSD is considered so dangerous that even the number of government supported research projects involving human subjects has dwindled to five.

11. In one of the earliest studies investigating the possibility that LSD breaks down chromosomes, Dr. Maimon M. Cohen, a geneticist at the State University of New York, found that LSD caused the same kind of chromosomal damage that occurs with radiation.

12. LSD is not an aphrodisiac for it actually dulls sexual capacities.[23]

13. Acts of violence and crime are easily committed under the influence of this drug and that is why the possession of LSD has been declared illegal. Penalties for violations are severe.

Some LSD users tend to interpret all of the above findings as a scare technique put out by the government to keep them from a "good" thing. One would obviously be far safer to heed the warnings and refrain from taking LSD until all the facts are known. Young people of today do have a choice to make - their future children do not. Fortunately the fascination with LSD appears to be declining, because of the recognition of its dangers.

The social aspects of the drug are also of vast importance. LSD has been around for about 20 years. Today it is used for the most part by people under the age of twenty-six. The people most likely to try LSD are those who have a difficult time "feeling things." Taking the drug is usually a group endeavor and the role of the group in structuring behavior is great. The effect may be aesthetic or terrible, but in any event the user had a "trip from reality." These "trips" take people from the pressing problems of the world and lure them to "cop-out" or not come to grips with life. The repeated user may eventually live a drug oriented life and the individuals involved negative and unconstructive.

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[23] This Week Magazine, August 6, 1967, p.4.

TOBACCO

Introduction

Smoking has been a popular habit for approximately fifty years in the United States. During that period of time there have been many investigations into a possible relationship between health and smoking. None of them made much of an impression until the 1964 report entitled "Smoking and Health" addressed to the Surgeon General of the United States Public Health Service. This report was compiled by ten eminent scientists who had been accepted as impartial by both the tobacco industry and health agencies. Of these ten scientists five were smokers and five were abstainers. This committee studied evidence from all over the world which had been gathered from laboratory experiments, autopsies, and population studies. The committee drew two significant conclusions:

1. Anyone smoking cigarettes has a greater chance of dying from lung cancer, chronic bronchitis, emphysema, or coronary heart disease than an individual who does not smoke.

2. The earlier a person starts cigarette smoking, the greater the chances are that he will become a heavy smoker and develop the habit of inhaling, which further increases the risk of early disability and a shortened life. The longer one puts off starting smoking or the sooner he can stop, the greater his chances are of avoiding these diseases.

Accordingly, many people stopped smoking, and others tried to stop. This situation did not last long, and today cigarette sales are higher than ever before. This is despite the fact that a 1967 report, based on more than 2,000 research studies, confirmed the findings of the Surgeon General's report. Estimates today indicate that every day nearly 4,500 potential smokers light up their first cigarettes.

The educational task appears to be one of informing students of the possible risks involved in such actions. Educators should make certain that no student chooses to smoke without full knowledge of such risks.

The Problem

Americans smoke about 500,000,000,000 cigarettes, or the equivalent of about 2,777 cigarettes a year, or seven cigarettes per day, for every man, woman, and child in this country.[24] The one pack-a-day cigarette smoker spends about $125 in one year or nearly $1,250.00 in ten years on cigarettes.[25]

The smoking habit usually begins in the early teens, but studies indicate that smokers are starting at younger ages all the time. There are few smokers before the age of ten or twelve, but a study of 16,000 grade school youngsters in Atlantic City revealed that many smokers started as early as eight years of age.[26] Exploratory smoking generally begins in junior high school with regular smoking starting in the eighth and ninth grades. The National Council of Parents and Teachers points out that one high school student out of every three smokes.[27] A study conducted in Portland, Oregon, showed that one in every four boys and one in every eight girls in high school smokes.[28] The boys are also the heavier smokers. One study estimated that by twelfth grade 40 to 55 per cent of all children are smokers.[29] Nearly a quarter of these students smoke half a pack or more a day.[30]

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[24] Today's Health Guide, American Medical Association, 1965, p.454.

[25] Pennsylvania Tuberculosis and Health Society, Nick O'Teen the Cigarette, The Society, 1966.

Why Teen-Agers Smoke

The reason a person starts to smoke is an individual and personal one. Smoking appears to be related to the smoker's needs, desires, and problems. The habit of smoking also has certain cultural and social aspects.

At one point in our cultural history, smoking was regarded as a somewhat crude though manly habit. The woman smoker was considered to be of poor moral character. The world wars and increased advertising helped make the use of tobacco a socially acceptable habit; so much, in fact, that today's youth connect smoking with the adult world of sophistication and maturity. It has been estimated that 60 per cent of American men and 30 per cent of American women smoke.[31] Smoking has become such an integral part of adult living that children may come to feel it is a normal part of everyone's life.

For some students, smoking may represent a rebellious reaction against restrictions with the cigarette a symbol of rebellion against adult authority. This is substantiated by one study which found a high proportion of smokers in the Catholic schools, where discipline is generally stricter, than in public schools. The same study concluded that roughly 10 per cent of all high school smokers do so against parental prohibitions. It is interesting to note that this is more true for girls than for boys, and there is somewhat more defiance of paternal than of maternal restrictions.[32]

The influence of the peer group is very great in determining whether the adolescent becomes a smoker or not. The child tends to smoke if his friends do, and many smokers give as their reason for smoking the fact that everyone else in their group does it.

Some teens may also smoke because of a failure to achieve peer-group status or satisfactions. It has been found that smoking is high among those students who are behind their age equals in school, who do not participate in extra-curricular activities, and who take a scholastically less demanding course of school work. These factors account for about one-fourth of student smoking. This may represent a compensatory form of behavior, and smoking itself in these cases is symptomatic of personality problems.

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[26] Today's Health, January, 1968, p.69.

[27] Ibid.

[28] McGrady, Pat. Cigarettes and Health, Public Affairs Pamphlet No. 220A, March, 1960, p.1.

[29] Today's Health Guide, American Medical Association, 1965, p.454.

[30] Blumgartner, Leona. "The Facts on Teen-Age Smoking," Parents Magazine,1960.

[31] Today's Health Guide, American Medical Association, 1965, p.454.

[32] Horn, Daniel. "Modifying Smoking Habits in High School Students," Children, Vol. 7, No. 2, March-April, 1960, p.64.

Parental and sibling influences appear to be one of the largest factors determining smoking behavior. Countless studies have been conducted to support this theory. One such study found that where neither parent smoked, roughly one-quarter of the students were smokers; in families where both parents were regular smokers, approximately half of the students were smokers. Even if one parent smokes, the chances are greater the children will also smoke. The influence of the relationships of one smoker on another is so strong that even the father is more likely to smoke if the mother is a regular smoker and vice versa.

Social class is also a factor to be considered, for studies have shown the highest percentages of smokers come from the lower social economic groups. This may also be a determining factor in whether parents can quit smoking or not. It may be that smoking is a more highly engrained way of life among the lower economic classes, and therefore, a more difficult habit to break.

Cigarette advertising may also influence one's smoking habits. Cigarette advertising, which is approaching the $200 million-a-year mark, connects smoking with such pleasurable associations as sophistication, fun, trading coupons, masculinity and femininity, taste, sunny green country, rugged country or springtime. Today by law a package of cigarettes carries the message "Caution: Cigarette smoking may be hazardous to your health." Thus far no one actually knows how effective anti-cigarette advertising methods are, but it must be recognized that most cigarette advertisements add to the glamour and desirability of smoking.

Other reasons given for smoking are that it helps the smoker concentrate, stimulates thinking, relaxes and releases tensions, soothes nerves, gives taste and pleasure, gives him something to do with his hands, and leads to social acceptance. It is known that in the case of relaxation nicotine is a stimulant, and in the long run abuse of this substance only adds to nervousness rather than reduces it.

Effects of Smoking

Tobacco contains the drug nicotine, which is a toxic agent and when concentrated becomes a potent poison. Seventy milligrams of nicotine in a person's blood stream would be fatal. Each cigarette contains between one-half to two and one-half milligrams of nicotine.

The wonderful mechanism, the human body, has developed long established techniques for protecting itself against the various poisons inflicted upon it. This process is the development of tolerance. When small amounts of poison are injected into the blood stream, chemical and organic changes take place which allow the system to tolerate the poison. Through repeated use, the "tolerance process" undergoes a dramatic change in its role as a bodily function. The "tolerance process" is a response or a bodily reaction to an induced toxic stimulus and evolves to a point where it becomes automatic.

In fact, it becomes automatic to the extent that, if the stimulus is lacking, a need or drive to secure the stimulus results. Thus, the toxic agent becomes the fulfillment of the physiological drive or need; whereas in the beginning it was the stimulus causing bodily changes as its response or reaction.

This physiological need for the poison in the bloodstream is dramatically seen in the case of drug addicts. Although not as powerful or damaging as most drugs, nicotine is a drug and the same kind of tolerance process takes place. Withdrawal is not as severe, but nevertheless it does take place. It is, therefore, understandable how smoking can become habit forming and even addictive.

Physiological Effects. During smoking a mixture of gases, various vaporized chemicals, and millions of minute particles of ash and other solids are drawn through the nose and throat and into the lungs by inhalation. Nicotine and tar make up the largest percentage of the substances inhaled. Vaporized tar makes up about forty per cent of the smoke. There are small amounts of carbon dioxide, arsenic hydrogen cyanide, and some other harmful chemical compounds. A significant amount of carbon-monoxide is also produced, which is quickly picked up by the oxygen-carrying hemoglobin of the blood and reduces its oxygen-carrying ability. The four main health problems associated with smoking are (1) heart trouble, (2) cancer of the lung, (3) chronic bronchitis, (4) emphysema.

Effect on the Circulatory System. Besides the effect of carbon-monoxide on the circulatory system, nicotine stimulates that part of the nervous system that controls the heart, blood vessels, and other internal organs which function almost automatically. Smoking is known to be related to Buergers disease. This is a constriction of the small arteries in the hands and feet that can lead to gangrene and necessitates amputation.

Smoking and the Heart. There are more heart attacks among smokers than non-smokers. In a study of the smoking habits of over four thousand men, observed over a six to eight year period, it was found that the heart attack rate in heavy cigarette smokers was three times as high as in non-smokers. In studies of various groups it was found that death rates from heart attacks range from 50 to 200 per cent higher among cigarette smokers than among non-smokers. The average increase is about 70 per cent. The incidents range up or down depending on how much or little is smoked.

It has been estimated that, associated with smoking, there is an increase among men of about 60,000 premature deaths a year from heart attacks in the United States. This is approximately the same as the estimated number of men who will die prematurely from lung cancer and other diseases associated with smoking.

Effect on Respiratory System. The gases and particles in the smoke collect onto the surrounding membranes as the smoke is drawn through the air passages into the lungs. A point of large concentration of these particles and gases is the point where the bronchus tube divides into two smaller tubes. This is also the point where most lung cancer begins.

Physicians consistently find that the membranes lining the air passages of smokers are abnormally thickened. The hairlike cilia on these membranes become damaged and less effective in removing the toxic and irritating chemicals introduced in the smoke. Smoking also stimulates a contraction of the muscles in the walls of the air passages, which further reduces the air flow since the passages are narrowed. This causes what has become known as "shortness of breath" or "smoker's wind."

Another point of concentration for these harmful chemicals is in the membraneslining the larynx or voice box. A smoker's larynx is identified by its thicker, often swollen, vocal chords. The changes in the larynx cause increased secretion and result in what is commonly called "smoker's cough."

Smoking and Cancer. Lung cancer now kills approximately 41,000 Americans a year: 35,500 men and 5,500 women. This is ten times what it was thirty years ago, per 100,000 population, standardized for age.

More than twenty-five scientific studies in ten different countries have shown that there is a strong relationship between cigarette smoking and lung cancer and that the risk of developing lung cancer is directly related to the number of cigarettes smoked. A critical analysis of these studies with conclusions was published in 1962 by Royal College of Physicians of London.

For men who smoke less than a half pack of cigarettes a day, the death rate from lung cancer is seven times greater than that for non-smokers. It is more than twenty times as great for those who smoke two packs or more in a day. These figures are based on death certificate reports of lung cancer.

In January, 1964 the U. S. Surgeon General's Advisory Committee on Smoking and Health made its report to the public in a 387 page document. This followed a fourteen-month study of available information on the subject and was prepared by a panel of distinguished experts in the field. This report affirmed the earlier American Cancer Society's conclusions and uncompromisingly stated:

> Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction. The risk of developing lung cancer increases with the duration of smoking and the number of cigarettes smoked per day, and is diminished by discontinuing.

It has been pointed out earlier that "tar" makes up about forty per cent of inhaled cigarette smoke. The part of this "tar" which causes lung cancer and, in fact, cancer at other body sites is called "carcinogenic tar." This is what produces cancer when painted on mice. When applied to mice or other short-lived animals, it takes many months for the resulting cancer to be fatal. It follows then that it is years before these small amounts of "carcinogen tar," induced with each cigarette smoke inhalation, build up to a point where they become injurious or fatal. This is why the tables and prognostications concerning death due to lung cancer seem so long term and meaningless to people in the "under 30" bracket of life.

Chronic bronchitis and emphysema are the fifth cause of death today. In 1962 some 15,104 persons died of these diseases.[33] Bronchitis and emphysema frequently affect a person at the same time, but either one may exist by itself.

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[33] Salbar, Eva J. Facts About Smoking and Health. Chicago: Science Research Association, Inc., Guidance Series Booklets, 1955, p.48.

Chronic Bronchitis. Cigarette smoking is the most important cause of this ailment. Cigarette smokers are more likely to die from chronic bronchitis than are non-smokers. The Doll and Hill study reported that heavy smokers had six times the death rate from bronchitis than non-smokers had. Chronic bronchitis involves a constant inflammation of the bronchial tubes in the lungs and excessive mucus secretion in the bronchial tree. The patient coughs continuously and is short of breath. An acute attack of bronchitis may cause a fever and pains in the lower chest.

Emphysema. This is a very serious lung condition consisting of a breakdown of the normal lung structures. Emphysema is a condition in which air spaces in the lung enlarge and break down so that respiration is interferred with. Emphysema does not cause as many deaths as it causes suffering. An estimated 10,000,000 or more Americans live with it. Due to the shortness of breath which results, the patient can become a helpless invalid. It is not known if there is a causal relationship between smoking and emphysema, but it is definitely worse among smokers than among non-smokers.

Other Physiological Aspects of Smoking. In addition to the serious ailments which have already been discussed, cigarette smoking is also related to other physical ailments. There has been found some relationship between smoking and peptic ulcers, reduced vision, and cancer in other organs of the body. For example, a relationship has been established between pipe smoking and lip cancer. Also many smokers die or are injured in fires caused by a burning cigarette. Some evidence is also accumulating to show that mothers who smoke during their pregnancy endanger the lives of their unborn children.[34] These children tend to have lighter birth weights and more of them are born prematurely or are stillborn. Smoking can also interfere with athletic performance because it decreases the athlete's ability to take in and utilize oxygen. In other words, it decreases his maximum breathing capacity.

Tobacco and the Law

While it is recognized that the problem of tobacco abuse is so great as to make constant strict enforcement of the law impossible, the youthful abuser must recognize the difficulties he would encounter over illegal use of tobacco. Ignorance of the law is no excuse for the offense.

Illinois State Laws - Cigarettes

Chapter 111½, Section 322, Illinois Revised Statutes.

> Every person under the age of eighteen (18) years, and over the age of seven years, who shall smoke or use cigarettes, on any public road, street, alley or park or other lands used for public purposes, or in any public place of business or amusement, shall be guilty of a misdemeanor and punished for each offense by a fine of not more than ten dollars ($10).

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[34] *Time*, July 14, 1967.

Penalty for furnishing:
Chapter 111½, Section 323, Illinois Revised Statutes.

> That every person who shall furnish any cigarettes in any form to any such person, or who shall permit any such person to frequent the premises owned by him for the purpose of indulging in the use of cigarettes, in any form, shall be guilty of a misdemeanor and punished by fine not exceeding fifty dollars ($50) for the first offense, and not exceeding one hundred dollars ($100) for the second and every additional offense, or imprisonment in the county jail for a period not exceeding thirty (30) days for each offense.

Manufacture and sale of cigarettes regulated:
Chapter 111½, Section 321, Illinois Revised Statutes.

> Every person who shall manufacture, sell or give away any cigarette containing any substance deleterious to health, including tobacco, shall be punished by a fine not exceeding one hundred dollars ($100), or by imprisonment in the county jail for a period not to exceed thirty (30) days.

How to Quit Smoking

It is easy to start smoking, but to quit smoking is not. It makes no difference whether the daily consumption is three cigarettes or three packs, or any number of cigars or pipes; to quit is a difficult task.

Success depends on wanting to quit, will power, and the use of various gimmicks. One who is not sold on quitting may stop for a few days or weeks but usually returns to his habit.

There are two methods of quitting advocated at present. One is a gradual withdrawal type plan, such as cutting cigarette consumption in half each day until elimination of the last smoke makes one an abstainer. The other is the sudden cut off. Now one smokes - now one doesn't. For most people the gradual withdrawal type is less likely to succeed. The presence of tobacco and the knowledge that it could be smoked tends to weaken the resolve. Sudden cut off will be less comfortable, but has a certain finality that often seems to help.

The fact is, though, that it will be a hundred times easier not to start than it will be to quit. Whether to smoke or not to smoke is a major decision for anyone to make. Too often teen-agers slide into the smoking habit without any thought, but when they try to quit they realize they wished they had given it more thought before they had started.

Some studies have indicated that if a person does not begin smoking until about age 25, he probably won't start or will never smoke enough to cause himself great danger. Cigarette companies have long recognized this fact and have geared all of their advertising toward teen-agers and people in their early twenties. A person who has not started should carefully consider all the facts before doing so.

Conclusion

Regardless of what educators say or do, or how good a job they do in their teaching, it must be recognized that some individuals will still choose to smoke. The only advice to be given to these individuals is that they (1) choose a cigarette low in tar and nicotine, (2) smoke a cigarette with a filter, although these filter only a small portion of toxic elements out of cigarettes, (3) smoke a cigarette of short length, (4) avoid smoking the cigarette all the way down to the butt, for the second half produces more tar than the first, (5) smoke as few cigarettes per day as possible, (6) if male, consider taking up either a pipe or cigars, (7) puff less frequently and inhale less deeply, (8) see a doctor for regular examinations.

ALCOHOL

Introduction

An important aspect of health education is a study of alcohol, its physiological effects, and the social and economic problems resulting from the overuse or abuse of alcohol. Today we have an estimated 70,000,000 drinkers in this country. For 65,000,000 Americans controlled drinking is no problem. However, drinking interferes with the lives of over 5 million others. These people are classified as alcoholics. In the City of Chicago there are an estimated 175,000 suffering from this illness. Alcoholism is not a new problem in this country. In fact, it has even affected legislation. The 18th Amendment to the Constitution of the United States in 1920, which prohibited the sale of alcoholic beverages, was an attempt to control the problem of alcoholism. It was, however, repealed in 1933 by the 21st Amendment, indicating that legislation is not the most satisfactory solution to the problem. It is the goal of alcohol education to provide the facts about alcohol, its physiological effects, and the problems resulting from its abuse so that individuals will learn to make intelligent decisions about drinking habits. Drinking today is socially acceptable; therefore, teaching abstinence is impractical. Providing accurate information about alcohol resulting in controlled drinking would seem to be a realistic goal.

Definition of Alcohol

Basic to a study of alcohol is an understanding of what it is. Pharmacologically, alcohol can be called a sedative, a tranquilizer, or a narcotic. From the standpoint of nutrition, it can be called a food. It is, however, a poor food, because while the calories produce heat and energy, alcohol lacks other basic nutrients. The kind of alcohol found in beverages is ethyl alcohol. In its pure form it is a thin, colorless fluid with a burning taste. By weight it is one-fifth lighter than water and, therefore, mixes with water in all proportions.

Manufacture of Alcohol

This water-miscible liquid, alcohol, is formed by fermentation, which means that yeast in some form is allowed to grow in a solution of sugar. This solution comes from the juice of fruits, plants, or grains. The yeast changes the sugar into alcohol and carbon dioxide. Alcoholic beverages are made in three basic ways: (1) fermentation, which produces wines containing an alcohol concentration of 10 to 22 per cent by volume, (2) brewing, which results in beers containing about 4 to 5 per cent alcohol by volume, (3) distillation, which is necessary to manufacture an alcohol concentration over 15 per cent, produces spirits of about 52 per cent alcohol by volume. Distilled beverages are designated by a certain proof. This denotes twice the per cent of alcohol by volume. For example, a bottle marked 90 proof would be 45 per cent alcohol by volume. Most American spirits such as whiskey, gin, vodka, and brandy range from 80 to 100 proof.

The Body's Absorption of Alcohol

The process by which alcohol is absorbed into the body system begins immediately after it has been swallowed. The alcohol is absorbed from the gastrointestinal tract, passes through the portal vein to the liver and then through the interior vena cava to the heart, lungs, and arterial blood. Alcohol does not have to be digested but can enter the blood stream in small amounts directly through the walls of the stomach. The rate of absorption will vary, depending upon how much food the individual has in his stomach, the choice of drink, and the amount and speed of drinking. If a way could be found so that alcohol could be kept in the stomach until the liver could handle it for oxidation, there would be no intoxication, as alcohol would not reach the brain.

Factors Which Affect the Human Body's Reaction to Alcohol

The process by which alcohol is absorbed by the body is the same for all individuals, but the effect of alcohol upon an individual is dependent upon his unique physical and mental make-up. One of the physical factors which determines the effect of alcohol is an individual's metabolism rate. The liver is the organ that metabolizes alcohol. Oxidation by the liver is a highly complex process which changes the chemical properties of alcohol releasing heat and energy and returning carbon dioxide and water to the tissues. This ability to change the chemical structure of alcohol to produce heat and energy to be used by the body cells is done at a constant rate, but this rate differs with each individual. The essential element in the oxidation process is time. Body size of an individual is also a factor. A large person will have a larger liver than a small person; consequently the amount of alcohol which is oxidized will be greater than that of a small person in the same amount of time. If the absorption is delayed until the liver can metabolize it, the effects of alcohol will not be apparent. Three or four drops is the maximum amount the healthy liver can take care of at one time.

The effect of alcohol on a particular individual depends on the following factors: (1) amount consumed, (2) speed at which it was consumed, (3) the alcoholic content of the drink, (4) the weight of the person, (5) the rate of oxidation, (6) the amount of food in the stomach, and (7) the drinker's general physical condition.

Short Range Physiological Effects

When alcohol reaches the brain tissues, the result is similar to what happens when that tissue is deprived of oxygen. Alcohol actually affects all the cells of the body but the most dramatic effects are exerted on the brain. This is made apparent through alterations in behavior. After a certain amount of alcohol reaches the brain, its depressant effect impairs the person's judgment. As it becomes more concentrated, he has difficulty organizing his muscular movements. Eventually he may lose consciousness and under certain conditions an individual could drink himself to death. When the alcohol concentration in his blood reaches .05% he would be driving illegally as 50% unconsciousness occurs. One per cent of alcohol in the blood paralyzes the breathing center in the brain and death occurs.

When one drinks, he can expect the following stages of intoxication to result. These effects are listed for one ounce of liquor but can also be used for one 10 ounce bottle of beer, or one glass of wine.

Amount of Alcohol Consumed	Physical Effect
1 oz.	Some loss of self-control.
2 oz.	Distorted senses.
5 oz.	Loss of skills.
8 oz.	Disturbance of vision.
12 oz.	Stupor.
16 oz.	Death.

As can be observed from this listing, alcohol affects the latest learned or more complicated skills first and to a greater degree; judgment and emotional control are, therefore, some of the first skills affected. A real danger in drinking is the risk of intoxication. There is a psychological intoxication that occurs also in beginning drinkers. This is exhibited through an abnormal feeling of excitement; and in this state people often do reckless things, use poor judgment, or forget moral standards. Alcohol also causes a loosening of mental controls. Alcohol can lessen inhibitions, produce over-confidence, and create a willingness to take chances.

Long Range Physiological Effects

Stomach: A small amount of alcohol increases the flow of gastric juices which will irritate ulcers already present, but will not cause new ones to form. Chronic inflammation of the stomach lining is often found in very heavy drinkers.

Kidneys: Alcohol increases urinary activity by acting on the pituitary gland and reducing its activity.

Liver: In severe intoxication, the liver may become swollen and tender. The liver is not directly irritated by contact with alcohol even after heavy drinking, but prolonged heavy drinking can lead to cirrhosis of the liver. However, not all cases of this ailment result from over-drinking.

Water Balance: Following the consumption of large quantities of alcohol water moves from cells into the spaces around them causing the terrific thirst one experiences the "morning after."

Heart and Circulation: When drinking, one's heart beats faster, causing the skin to feel warm due to the dilation of the blood vessels near the surface of the skin. Actually the body is losing a small amount of heat. It is a falsehood, therefore, that taking a drink at a football game will help one stay warm.

Mental Effects: In cases of regular heavy consumption of alcohol, delirium, tremens during which the alcoholic has terrifying hallucinations, may result.

Longevity: Heavy drinking shortens life expectancy. A study of the drinking habits of 5,000 persons revealed that heavy drinkers don't live as long as non-drinkers do. There is no evidence that moderate drinkers have a shorter life span than abstainers.

Social and Economic Effects of the Overuse of Alcohol

Physiological damage caused by alcohol can be measured rather accurately. It is a far more difficult task to determine the social problems and economic loss resulting from an individual alcoholic's inability to cope with his life. Alcoholism accounts for an inestimable amount of misery, grief, sadness, and heartbreak. The absenteeism problem in industry caused by alcoholism has resulted in a loss in wages which is estimated currently at 432 million dollars per year. Because of the far-reaching psychological and economic effects of alcohol, in 1967 the United States Public Health Service named it the fourth largest public health problem. Locally, alcoholism is considered the third biggest health problem.

Reasons for Drinking

The reasons for drinking are innumerable. One of the major reasons is that alcohol is considered a symbol of the adult role in our culture. The desire to be considered mature is undoubtedly the reason why many teen-agers start drinking. A 1960 Gallop Poll cited that 67% of high school students drank. The question asked was "Do you ever have occasion to use alcoholic beverages such as liquor, wine, or beer, or are you a total abstainer?" A recent Chicago survey among juniors of one high school revealed that it is common to start drinking at thirteen years of age and that by the end of high school many have already formed drinking habits. A second reason for drinking alcohol is its use as a symbol for many religious ceremonials and secular festivities. Many children are introduced to its use very early in the home, and most have their first drink with parents or relatives. The associations an individual has of these festive occasions tend to glorify the practice of drinking. A third common reason for drinking is to relieve the pressures and fears generated by today's world.

Types of Drinkers

It is sometimes convenient to classify individuals by their drinking habits. Seven categories of drinkers are included in the following classifications. The abstainer is one who for moral, health, or religious reasons does not drink at all. The occasional drinker drinks only on special occasions such as a holiday or family celebration. A frequent drinker drinks alcohol with his food on occasion and also at social gatherings. He drinks out of custom and for relaxation purposes and is what we commonly call the social drinker. The regular drinker imbibes frequently or daily with his meals and several times weekly. He generally considers drinking important to social relations. This type of drinking contributes to his feeling of physical and psychological well-being. The alcohol dependent drinks daily or whenever possible to remove tension. The effect of this amount of alcohol consumed is to dull any feelings of inferiority, and intoxication may occur. He does not, however, drink to avoid meeting the responsibilities of life. The alcoholic drinks daily, and intoxication occurs regularly. This individual drinks because he is dissatisfied with himself or his environment. Here the effect of alcohol is to produce major changes in his behavior, and these are indications of severe emotional illness. If the person has reached the chronic alcoholic stage, he lives to drink and drinks to live. He is no longer capable of holding a job nor maintaining any decent standard of living for his family. This individual can no longer help himself. If this type of drinking continues, the individual suffers from malnutrition and may contact disease, particularly those affecting the respiratory tract.

Causes of Alcoholism

The actual cause of alcoholism is unknown as is the reason why it affects some people and not others. Alcoholism involves the consumption of large quantities of a drug; and habituation, tolerance, addiction, and withdrawal are known to occur. Two of the factors considered in the investigation of alcoholism are that of individual organ dysfunction or inherited weaknesses toward alcohol. No one answer is complete, but it is known that some psychological factors are involved. Most alcoholics feel unwanted, unloved, frustrated, unsuccessful, angry, or fearful, and they attempt to escape these feelings by excessive drinking. Social factors may also influence the development of the alcoholic. Studies have shown that the tendency to drink at all is slightly correlated with higher education, higher income, an urban environment, the male sex, and Protestant religious affiliation. Studies have shown that the proportion of non-drinkers is greater among Protestants than among Catholics and Jews. It is also known that peers exert a far greater influence than that of family in determining an individual's inclination to drinking.

Organizations for Alcoholics

Regardless of the reasons for its development, we know that among those who drink alcoholic beverages some become alcoholics. These people are unable to do anything about their own condition and must be helped by others. In fact, in 1956 the American Medical Association officially designated alcoholism as "an illness that deserves medical treatment." In addition to medical help, alcoholics also need encouragement in their struggle with alcoholism. One organization that attempts to give that is Alcoholics Anonymous, which was founded in 1935. This organization is an informal fellowship of past alcoholics whose purpose is to aid others to stop drinking. Branch organizations of AA are known as Alanon for the wives of alcoholics and Alateen for the children of alcoholics. Alcoholics Anonymous claim a 75 per cent recovery rate of those who come to them for help. The program is made up of 12 steps, the first of which is admitting that they are powerless over alcohol and that their lives have become unmanageable. Chicago has a center for the aid of alcoholics known as Chicago's Alcoholic Treatment Center. Treatment involves helping the individual regain his physical health and psychiatric or group therapy. Alcoholism is an illness that can be treated successfully.

Today health educators must recognize that the teen-ager who reaches his high school graduation without drinking is the exception to the rule. In a Michigan study it was found that only five in every one hundred students in their last two years of school have not tasted alcohol. Also, it is estimated that one out of fifteen individuals under the age of eighteen will develop into an alcoholic. The law in Illinois makes drinking before the age of 21 an offense, but this seemingly has not been a deterrent to students' drinking. As we cannot depend on the law to prevent drinking, sound education about alcohol and alcohol problems may help the individual make intelligent decisions about alcohol.

INSTRUCTIONAL AIDS

DRUGS

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Marijuana. Bailey Films.

ALCOHOL

Bulletin Board Materials:

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The Not Yet Alcoholic. Illinois Department of Public Health.

The Roots of the Problem. Illinois Department of Public Health.

TOBACCO

* Charts:

The American Cancer Society:

I Don't Smoke Cigarettes

More Cigarettes, More Lung Cancer

Smoking Is Very Glamorous

Smoking Is Very Sophisticated

No Smoking - Cancer Control in Progress

* Charts on pages 139-A through J may be used to produce overhead transparencies.

Tobacco Films:

No Smoking. Sid Davis Production, University of Illinois Film Library or Illinois Department of Public Health.

Point of View. Illinois Department of Public Health.

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UNIT NINE

GENERAL HEALTH

Introduction

General health is concerned with both the physical and mental health of the individual. The purpose of this unit is to discuss the means by which one's well-being is maintained through an understanding of nutrition, the prevention of disease both infectious and non-infectious, and the need for exercise and rest.

Nutrition

Because of the increased bodily and emotional activity experienced during adolescence, the need for proper nutrition becomes very important. Often symptoms such as listlessness, inactivity, irritability, excess weight and skin problems are caused by poor nutrition rather than by other factors.

Nutrition is often defined as the sum of the processes by which food is taken into the body and utilized. In order to gain understanding of nutrition, some knowledge of the nutritive value of foods, the digestive process, and the distribution and assimilation of food substances by the body is necessary.

Any substance which contributes to the growth, repair and release of energy in one's body is considered to be a food. Examples of foods most commonly given are carbohydrates, proteins, and fats. Since minerals, vitamins and water are also necessary for growth, repair and energy, they too are referred to as foods.

Digestion, of course, plays an important role in the utilization of foods eaten. Digestion, simply stated, is "making little ones out of big ones." It is the process of breaking large complex foodstuffs into smaller molecules that can dissolve in water and pass into the bloodstream and eventually into the cells. The process is both mechanical and chemical.

Mechanical digestion is accomplished by chewing and by the churning of the food in the digestive tract. Chemical digestion is the splitting of large molecules by the action of enzymes, chemicals secreted by certain organs of the digestive tract.

The organs directly involved in the digestive process are the mouth, pharynx, esophagus, stomach, pancreas, liver, small intestine, and large intestine. (See diagram).

Digestion begins in the mouth. The mechanical phase of digestion is accomplished by the chewing of the food; the chemical phase of digestion begins when the enzymes secreted by the salivary glands come into contact with certain foodstuffs. The food is pushed back into the pharynx where the swallowing

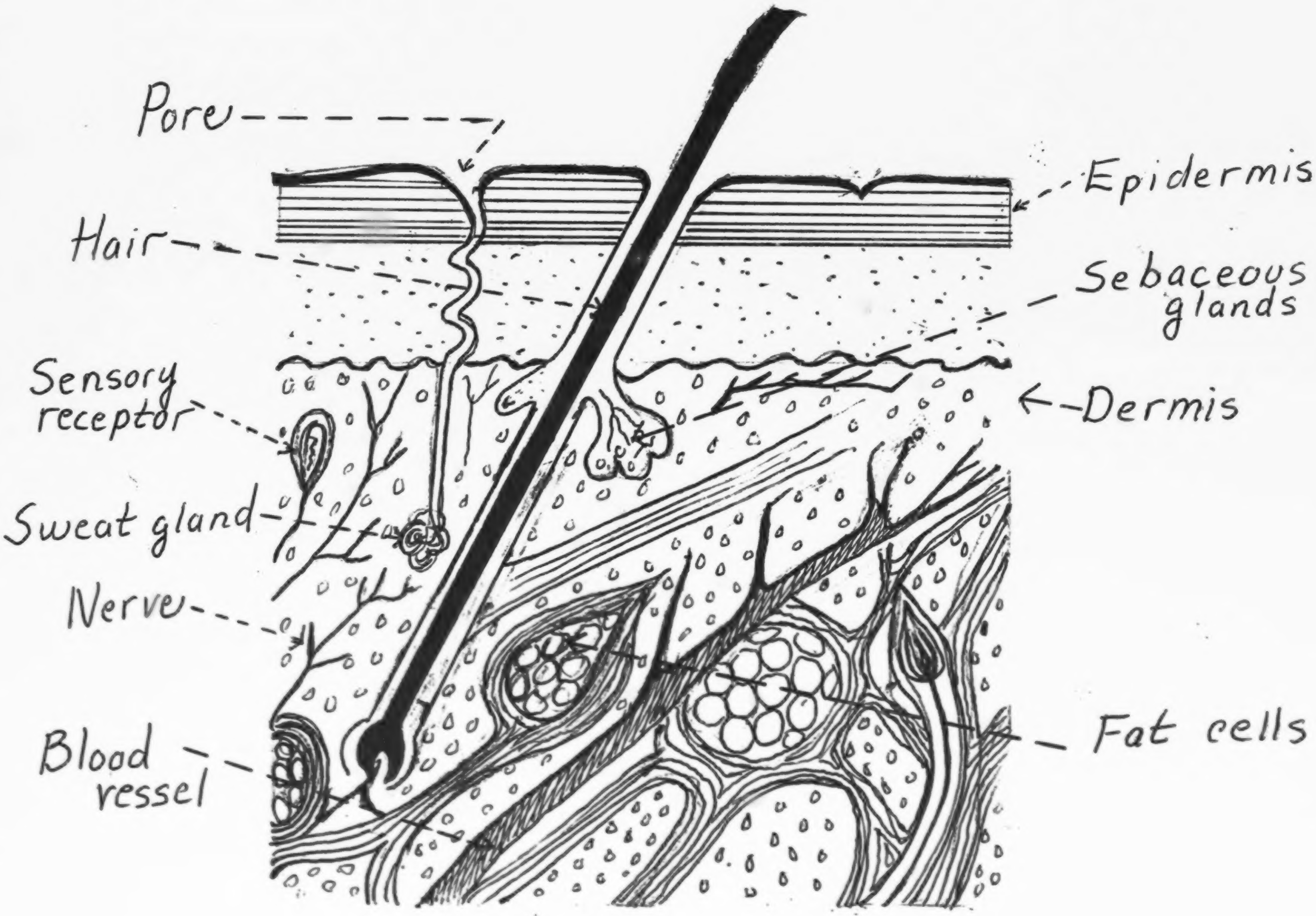

Pore
Epidermis
Hair
Sebaceous glands
Sensory receptor
Dermis
Sweat gland
Nerve
Fat cells
Blood vessel

Figure #1 Section through the skin

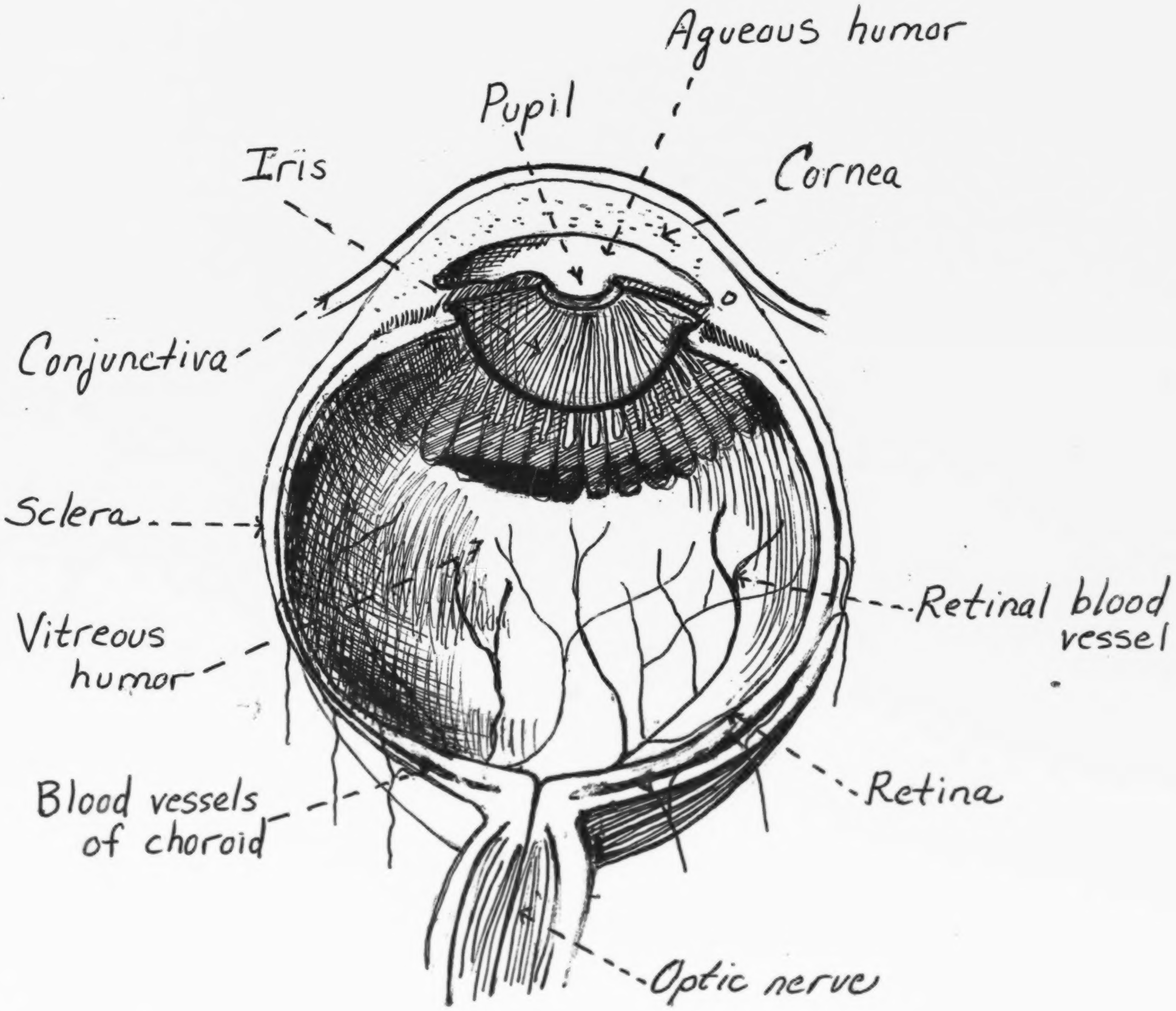

Agueous humor
Pupil
Iris
Cornea
Conjunctiva
Sclera
Retinal blood vessel
Vitreous humor
Blood vessels of choroid
Retina
Optic nerve

Figure #2 Horizontal section through the eyeball.

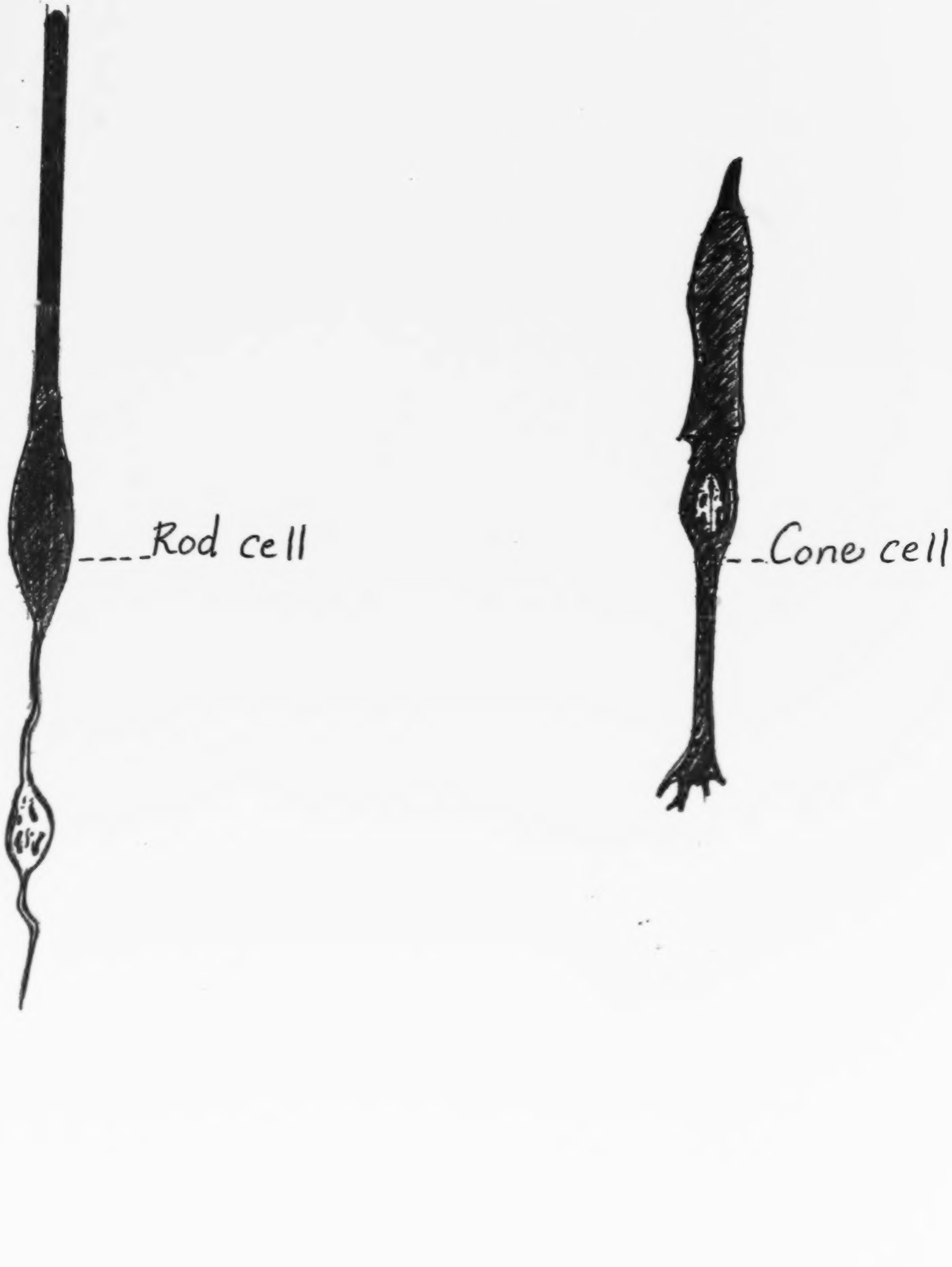
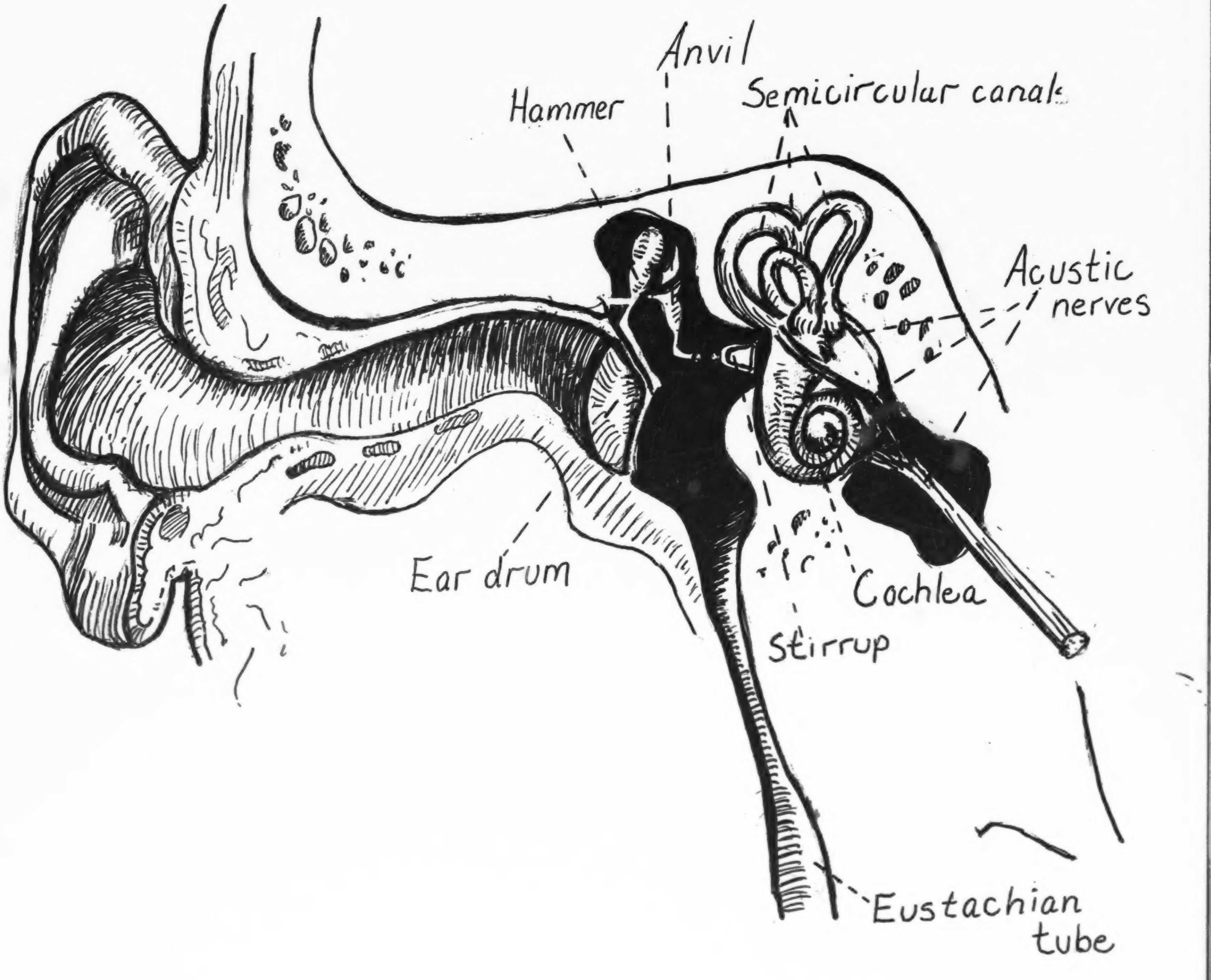

Rod cell
Cone cell

Figure #3 Receptor cells of the retina, greatly enlarged.


Anvil
Hammer
Semicircular canals
Acustic nerves
Ear drum
Cochlea
Stirrup
Eustachian tube

gure #4 The Ear

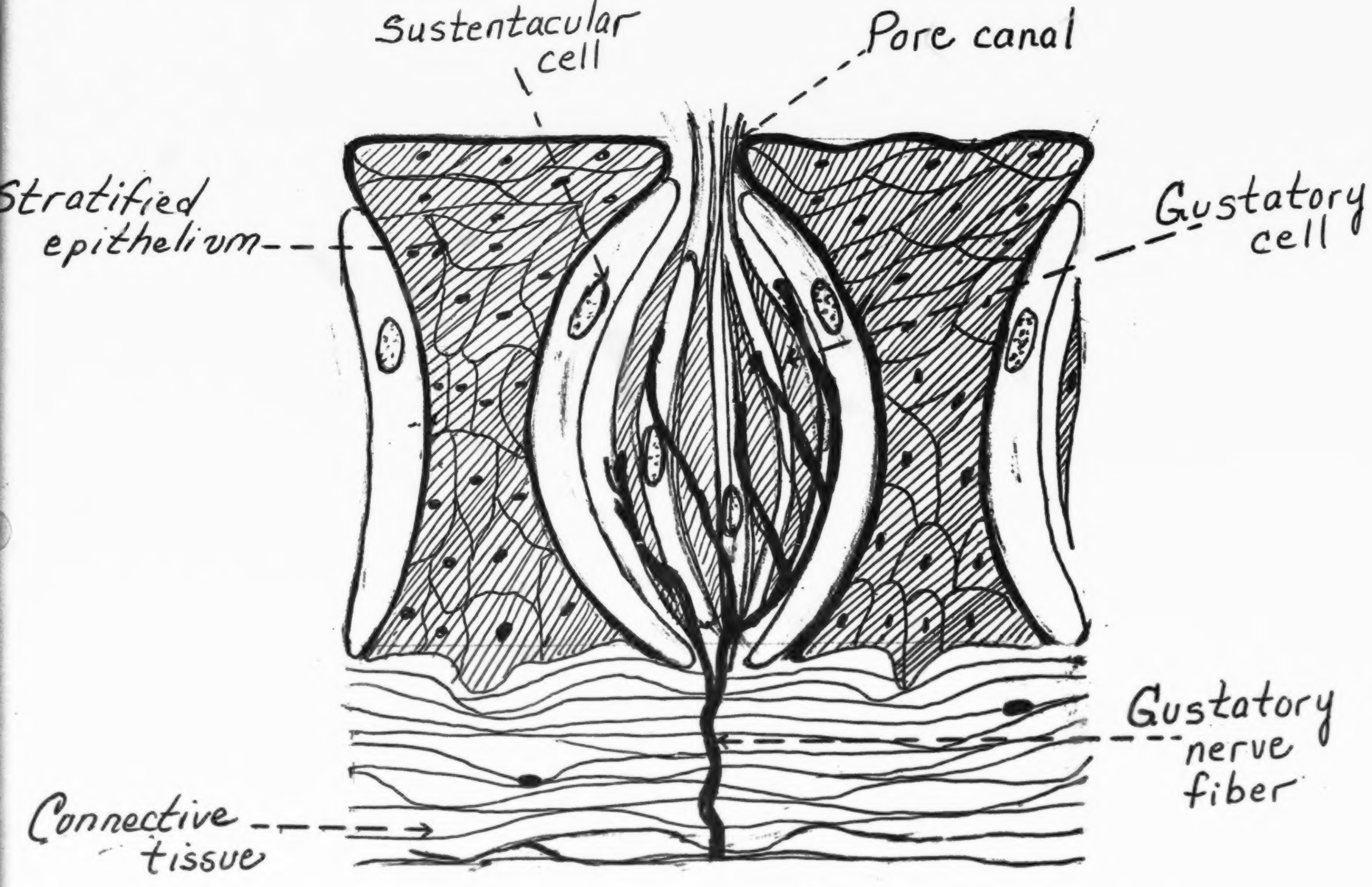

Sustentacular cell
Pore canal
Stratified epithelium
Gustatory cell
Gustatory nerve fiber
Connective tissue

Figure # 5 Vertical section through a taste bud.

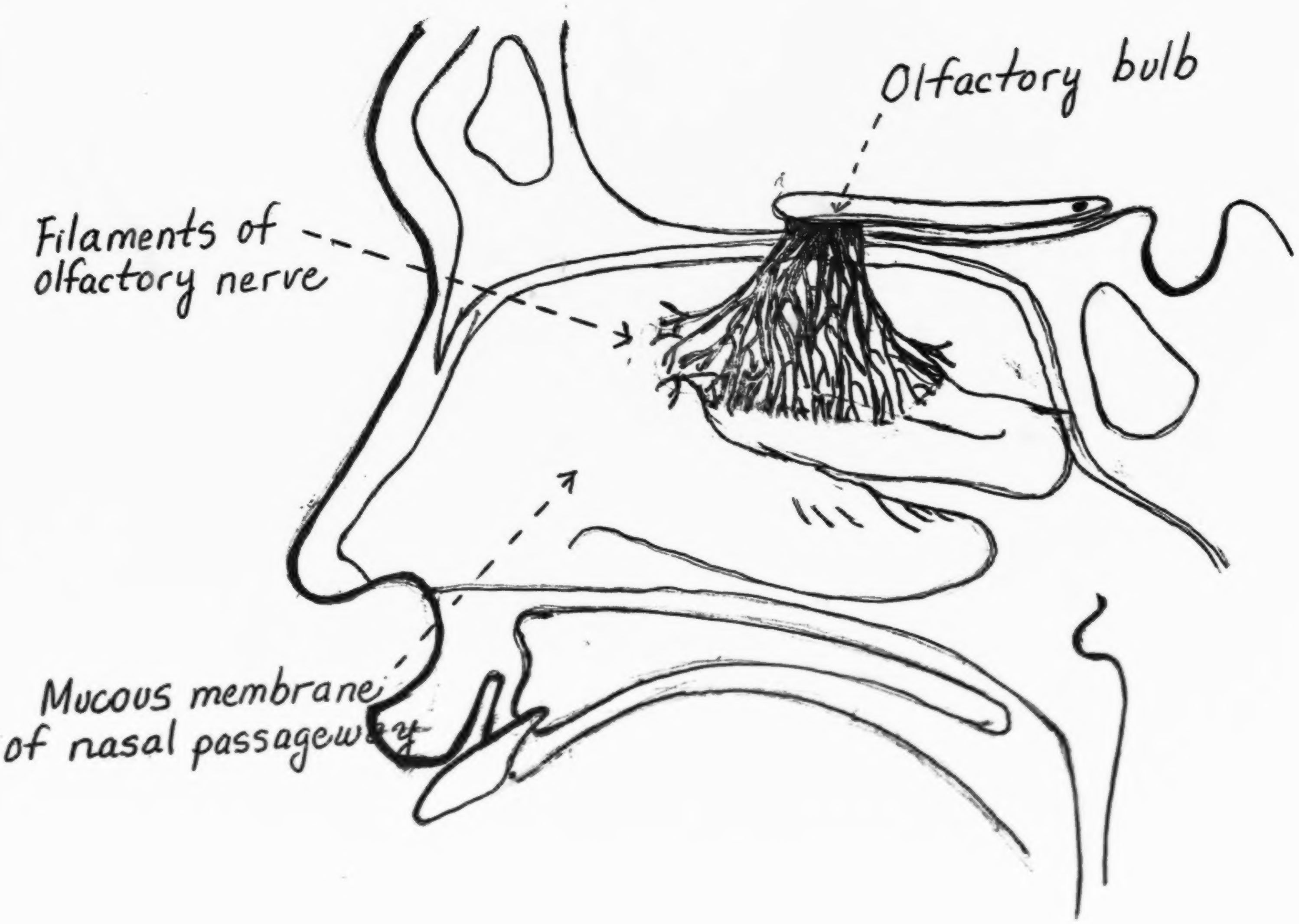

Olfactory bulb
Filaments of olfactory nerve
Mucous membrane of nasal passageway

Figure #6 The olfactory area in the nasal passageway

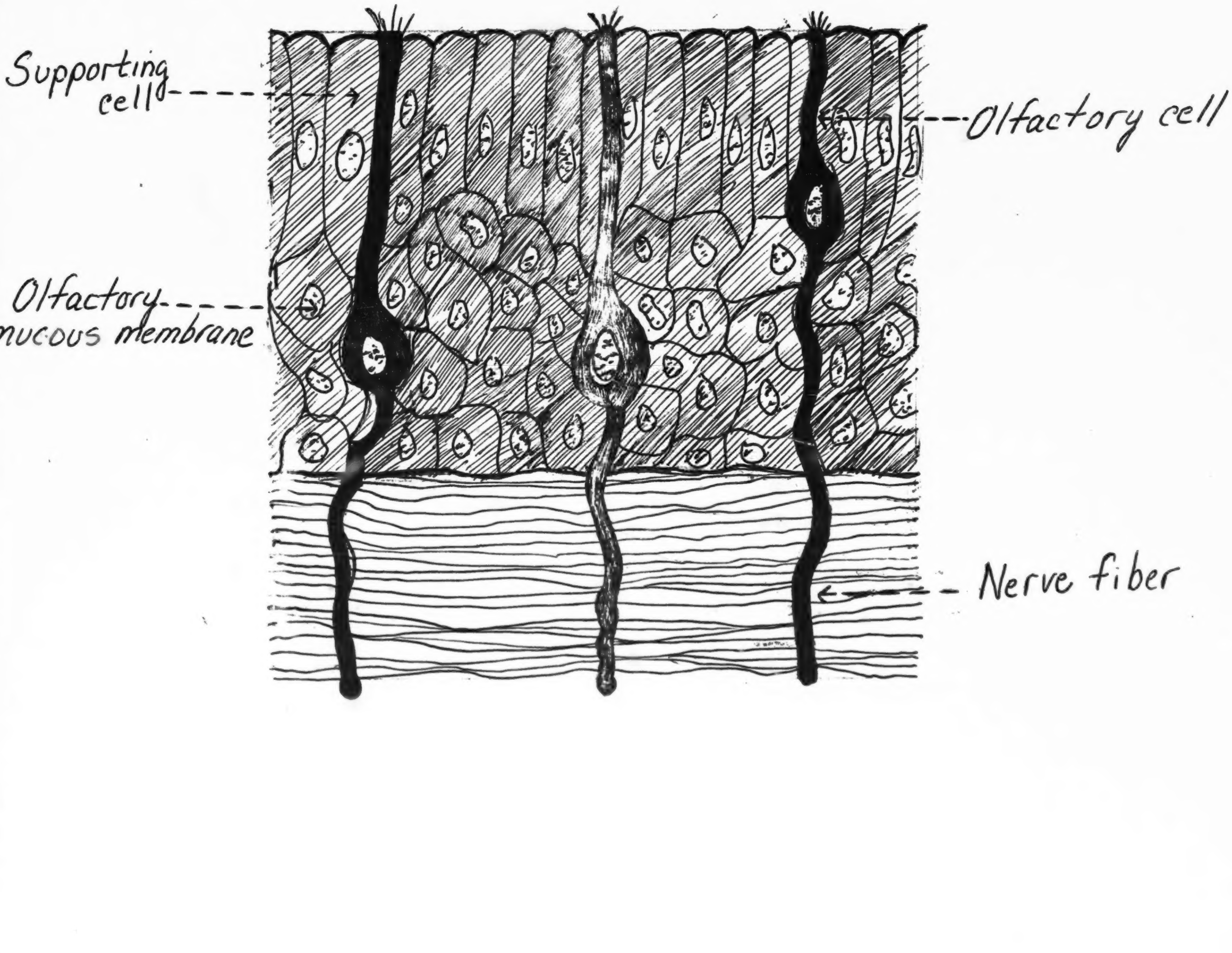

Supporting cell
Olfactory cell
Olfactory mucous membrane
Nerve fiber

Figure # 7 Olfactory mucous membrane

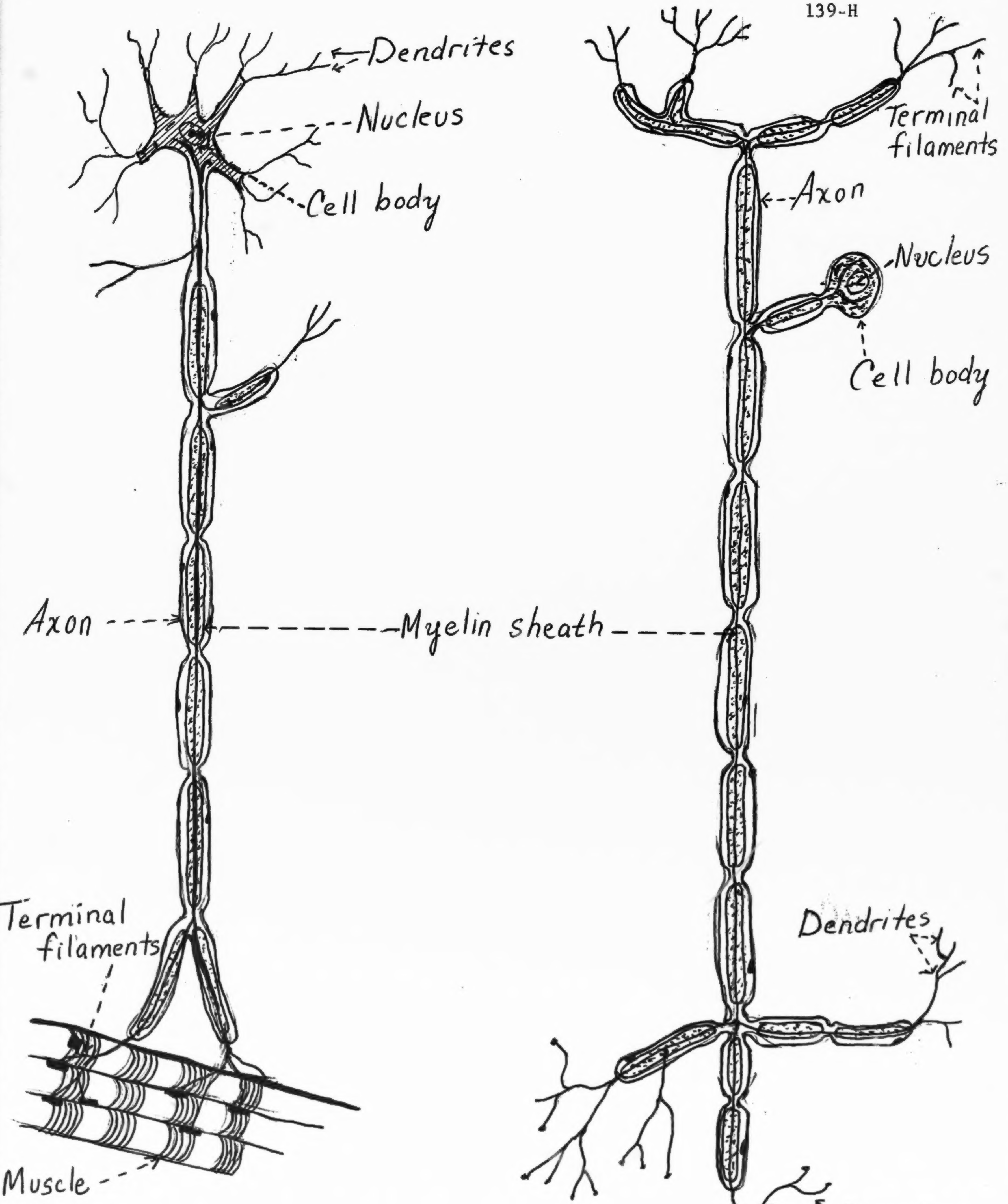
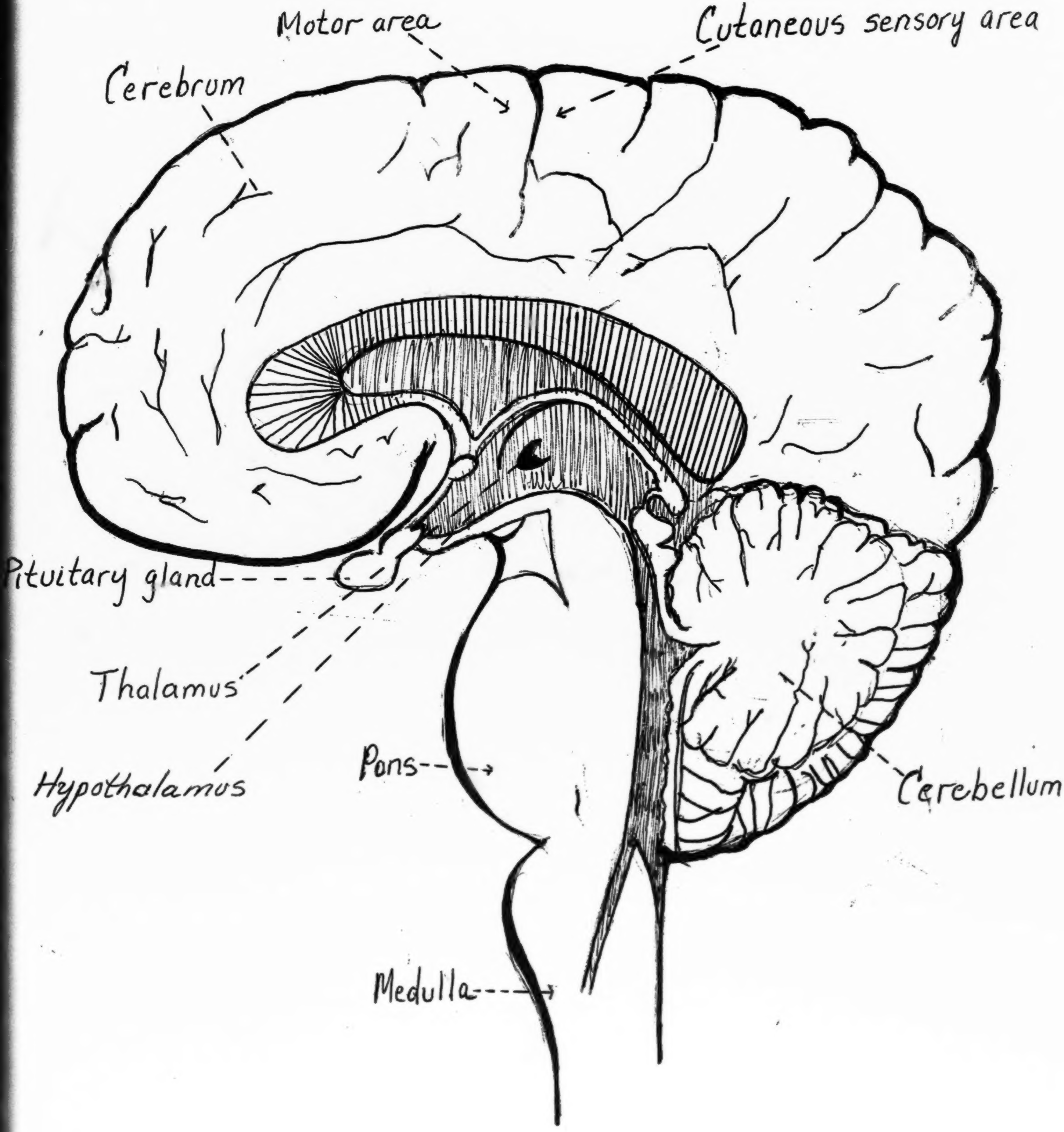

Dendrites
Nucleus
Cell body
Axon
Myelin sheath
Terminal filaments
Muscle
Terminal filaments
Axon
Nucleus
Cell body
Dendrites
Receptors

Figure #8 Two common types of neurons: a) spinal motor neuron; b) spinal sensory neuron.


Motor area
Cutaneous sensory area
Cerebrum
Pituitary gland
Thalamus
Hypothalamus
Pons
Cerebellum
Medulla

igure #9 Sagittal section through the brain.

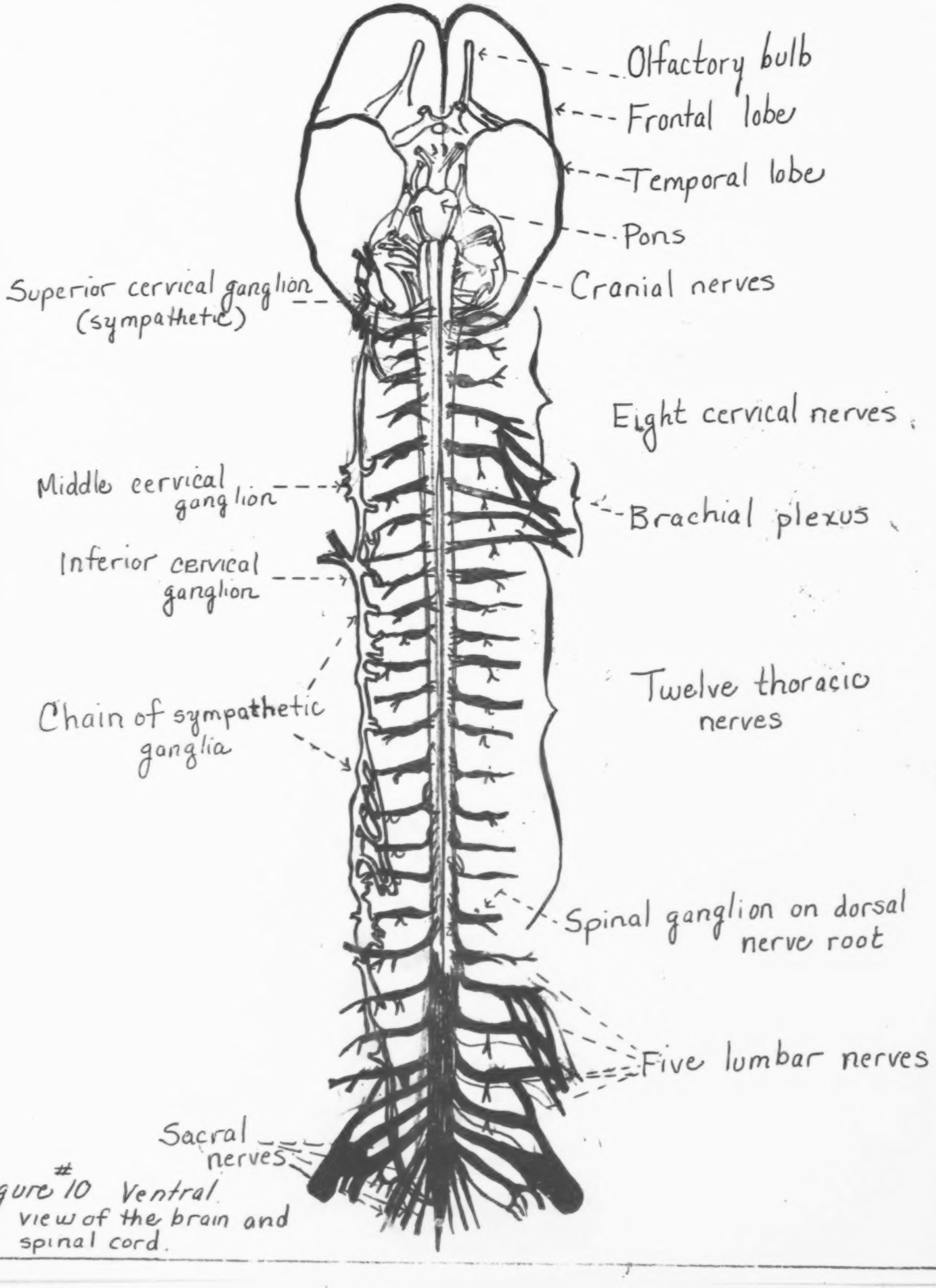

Olfactory bulb
Frontal lobe
Temporal lobe
Pons
Cranial nerves
Superior cervical ganglion (sympathetic)
Eight cervical nerves
Middle cervical ganglion
Brachial plexus
Inferior cervical ganglion
Twelve thoracic nerves
Chain of sympathetic ganglia
Spinal ganglion on dorsal nerve root
Five lumbar nerves
Sacral nerves

Figure #10 Ventral view of the brain and spinal cord.

reflex is initiated. Many people have the misconception that when food is swallowed, it simply falls into the stomach because of gravity. This is not true. The food is pushed down by a series of rhythmic contractions of the esophagus which may take from 5 to 7 seconds. The truth of this phenomenon can be demonstrated by swallowing in an upside down position.

The stomach serves as a temporary storage place for food. During this time, gastric juices secreted by the stomach are added. Gastric juice consists of another enzyme and a strong acid. This enzyme in the stomach functions best in an acid environment and furthers additional chemical digestion. The acid provides the necessary environment for the gastric enzyme and also kills many micro-organisms that enter the stomach. It takes the stomach three to four hours to empty after a meal and it is during this time that food reaches the consistency of a semi-liquid and is passed on to the small intestine.

It is in the small intestine that the greatest amount of digestion takes place. Various enzymes secreted by the small intestine and pancreas, along with the bile secreted by the liver, carry the chemical process of digestion to completion. The end products which result from this chemical digestion are now in the state which makes them soluble in water and able to be absorbed into the bloodstream and cells. These end products are simple sugars resulting from carbohydrate breakdown; amino acids resulting from protein breakdown; and fatty acids and glycerol resulting from fat breakdown.

As these materials pass through the small intestine, the simple sugars, amino acids, fatty acids, mineral salts, and vitamins are absorbed into the bloodstream. All remaining materials pass on into the large intestine. These highly fluid materials are the food residues.

The function of the large intestine is to absorb the water from these food residues. The consistency of the end product, which is now called the feces or stool, is determined primarily by the length of time the residue remains in the large intestine.

Constipation is the result of feces remaining in the large intestine for too long a period of time with too much water removal. Usually constipation can be avoided if one drinks plenty of water, eats vegetables and fruits, takes some exercise every day, and forms the habit of going to the toilet at the same time every day.

Proper Nutrition for Mental and Physical Well-Being

During adolescence, nutritional needs are probably greater than at any other period of life. Physical growth, mainly the rapid increase in height and muscular development, demands an adequate diet. There is also an increase in mental activities. These activities require vast amounts of energy and body building materials. The only source of this energy and building material is the food one eats. Obviously one needs a well-balanced diet.

There is no single natural food that will assure good nutrition. Well-balanced meals include meat, dairy products, fruit, vegetables, bread and cereals.

Why is such a diversity of foods necessary? Isn't it possible to get all the necessary nutrients from a single food? The materials which provide energy are primarily the carbohydrates and fats. There is a variety of carbohydrates. Carbohydrates consist of the various sugars and starches. There is also a great variety of fats (oils). Because of these varieties, there is no single food substance which contains all of the necessary carbohydrates and fats and a variety of foods must be eaten.

The end product of protein digestion, the amino acids, is reconstructed into human proteins which are used to build and repair tissues, manufacture enzymes, hormones and other essential substances. There are 20 different kinds of amino acids which are made available by the digestion of a variety of proteins. The source of these proteins is a variety of foods.

Generally speaking one can think of carbohydrates and fats as the "fuel" that provides body energy, and the proteins as the building blocks that make up the "container" in which their burning takes place.

Since no single food has all of the necessary carbohydrates, fats and proteins, a daily diet consisting of the variety of foods shown in the following table is necessary. These will also provide the necessary minerals and vitamins.

Guide to Good Food

Teen-Age Daily Requirement *

1. Milk and milk products: four glasses of milk, some of which may be supplemented by cheese, ice cream, or other dairy products.

2. Meats, fish, poultry, and eggs: two servings or more per day, part of which may be supplemented by beans, peas, or nuts.

3. Vegetables and fruits: four servings or more of a large variety of vegetables and fruits.

4. Breads and cereals: four servings of whole grain or enriched bread and cereal.

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* This does not mean that every individual should eat the above foods every day. Some people require more food, or more of certain foods, than others. Also, what one may miss one day may be taken in abundance the following day.

With the intake of a well-balanced diet the use of vitamin pills becomes an unnecessary expense. A well-balanced diet will provide all the vitamins necessary for the average person. It would be wrong to rely on vitamins to supplement a diet that is inadequate in calories, proteins, minerals, or other nutrients. Since most vitamins cannot be stored, all in excess of the daily requirements are excreted.

Weight Control

Nutrition and weight control go hand in hand. Usually a close look in a full-length mirror will give one a general idea of his physical health.

Height-weight-age tables show what most people at any age and height normally weigh. Due to such variables as bone structure, muscular development, and metabolic rate, variation from the table by an individual is normal.

One way of judging a meal is by the number of calories it contains. The amount of energy contained in foods is measured in units called calories. Each individual has a calorie requirement dependent upon his age, his weight and the kind of activity in which he engages. If the food one eats if more than enough to meet the body energy needs, the excess is stored chiefly as body fat and a gain in weight results. Weight watchers count calories, recognizing that whether one gains, loses, or stays the same depends upon the difference between food energy intake and body energy requirements. Generally speaking fats contain the greatest number of calories per unit weight and proteins the least.

Calories Needed for Various Activities

Kind of Activity	Calories Per Hour Per Pound of Body Weight
Sleeping	0.43
Sitting at rest	0.65
Standing	0.69
Dishwashing	0.99
Walking	1.60
Swimming	3.25
Running (fast)	3.70

Diets

The most common purpose of diets is to gain or lose weight and they may vary in composition from baby formula to fish, rice, bananas, and countless others. A successful weight-reduction diet or a weight-gaining diet must be planned to meet the needs of the dieting individual and must provide the necessary daily food requirements to protect general health. The only variation should be in the total number of calories consumed. Fad diets often disregard this important principle. The pressures of advertising and fashions make the desire to be thin the fad of today. Let us consider some of these diets.

The high fat diet suggests the consumption of large amounts of fat meat with the exclusion of salt, sugar, desserts and starches. This diet may provide in excess of 2,000 calories per day. It is nutritionally poor because of its disregard of the body's need for carbohydrates, minerals and vitamins.

Another popular diet involves periods of fasting. It is true that under the advice of a doctor, most people in good health can undertake one to three day periods of fasting. It is also true that a loss of weight will result. However, this weight loss is not usually permanent since eating habits are seldom changed.

Liquid and formula diets are convenient to use and nutritionally sound. However, their appeal is short-lived and they provide little or no roughage for the digestive tract.

Training diets: Most of the so-called training diets are myths. Supplemental sugar is not required for "quick energy." Beefsteak does not necessarily make a football player big and tough. Good nutrition for the athlete is the same as good nutrition for anyone else only he needs a greater amount of food than the average person of the same age and size. Like anyone else, an athlete needs a daily diet which includes the "basic four." Because he is exercising heavily, the athlete will eat more of these foods than the average person - but he should eat only as much more as will permit him to maintain his desired weight. There are no magic foods which will produce super-power agility.

Drugs are often used to depress the appetite. Besides inhibiting hunger, many of these drugs produce depression, irritability, nervousness or impulsive behavior. This use of drugs should always be under the supervision of a physician.

Knowledge about the principles of nutrition will prevent one from following fad diets and encourage sound dietary practices. If you are dieting, losing one or two pounds a week on a balanced diet is best.

There are some individuals whose health conditions require specialized diets. Persons with diabetes, ulcers, heart conditions, hypertension, fall into this category. Physicians prescribe diets for such individuals.

Disease

Disease may be defined as any condition which actively impairs the health or interferes with the normal functioning of the body of an organism. The two distinct groups of diseases are the infectious and the non-infectious.

Infectious Diseases

Any disease caused by a micro-organism is said to be infectious. The term pathogenic is used to distinguish disease producing organisms from harmless forms. Common types of pathogenic organisms are viruses, bacteria, spirochetes, protozoans and fungi.

Most everyone is familiar with viruses because of their association with well-known human infectious disease. Among these diseases are smallpox, chickenpox, influenza, colds, sinus infections, a form of pneumonia, polio, rabies, measles and mumps.

The true nature of a virus is not well understood. Viruses, if they are alive, are the smallest living things known and are visible only under the electronic microscope.

The largest number of pathogenic organisms are bacteria. Among the well-known bacterial diseases are tuberculosis, tetanus, typhoid fever, loboc pneumonia, strep throat, diphtheria, and gonorrhea.

Bacteria are one-celled, microscopic plants. In form, bacteria may be rod-shaped, spherical or spiral.

Protozoa are one-celled animal forms such as the amoeba. Some of the diseases caused by protozoans are malaria, sleeping sickness, and amebic dysentery.

A group of pathogens which resemble both spiral bacteria and protozoans are called spirochetes. The syphilis organism is the best known of these.

Fungi are plants that are more complex than bacteria. Common types of fungi are yeasts and molds. Fungi cause athlete's foot and ringworm.

All pathogenic organisms must have food to remain alive. Illness results when pathogenic organisms enter one's body and use it as a food source. Some diease organisms cause damage by producing poisons, or toxins, which injure or kill the cells of the body.

To produce disease a pathogen must enter the body and multiply. Most pathogens enter the human body through the respiratory system. Relatively few enter through the intestinal tract and breaks in the skin.

More disease producing organisms enter and leave the body by the way of the nose and throat than by any other channel. These diseases are especially difficult to control. They include chickenpox, German measles, pneumonia, mumps, measles, strep throat, colds and influenza. These are often referred to as air-borne infections.

Food-born, water-born infections include such diseases as typhoid fever, food poisonings and dysentery. The organisms are commonly deposited on the food by fingers and flies. Poor sanitary conditions result in polluted water.

Many skin diseases such as ringworm, boils and impetigo are spread by direct or indirect body contact. Two diseases of real importance which spread by this manner are syphilis and gonorrhea.

The unbroken skin is an effective barrier against pathogens. Breaks in the skin frequently become wound infections. Puncture wounds are especially dangerous because of the possibility of tetanus. Rabies is a dreaded disease transmitted through wounds resulting from bites of rabid animals, most commonly dogs.

Insects spread disease in two entirely different ways. The housefly carries germs on his sticky feet and hairy body. A disease transmitted in this manner is typhoid fever. Other insects carry bacteria internally and transmit them in bites. Examples of these diseases are typhus malaria.

The body has a variety of natural defenses against diseases. Skin and mucous membranes prevent organisms from entering the body and serve as first line defense. Many of the secretions of the body such as perspiration, tears, nasal secretions, saliva, and gastric juice are slightly antiseptic and tend to destroy micro-organisms. Another line of defense is provided by the white blood cells, White blood cells engulf and destroy the micro-organisms that have entered the body. Fever, a rise in body temperature, is helpful in combating infection. Most disease producing organisms are less active at high temperatures than at normal body temperatures.

Chemical substances called antibodies are manufactured by the body and are the most effective means of combating infection. Antibodies are formed against a specific disease and act only against that disease. It is during the time that the antibodies are being produced that symptoms of the disease are displayed.

Serums, antibiotics and other chemicals are of great importance in the treatment of many infectious diseases because they assist the natural body defenses.

The Common Cold

A disease that has been experienced by almost everyone is the common cold. A cold is a viral infection, usually without fever, which causes inflammation of the upper respiratory tract (nose and throat). A cold virus affects the mucous membrane of the nose, throat and lungs causing the membranes to swell and secrete great amounts of additional mucous.

A cold itself is a mild disorder lasting only four or five days. Secondary infections often follow in the wake of a neglected cold. The weakened mucous membrane resulting from the cold allows a wide variety of bacteria to enter and cause further infection.

There is no drug of any kind that affects the cold virus itself. Some drugs may be administered but their function is to treat bacterial complications of the cold or to relieve the symptoms of a cold. The most effective cold cure is rest.

Mononucleosis

Mononucleosis, also known as kissing disease, glandular fever, lovers' disease and college disease, is an acute infection involving the lymph glands. The symptoms are fever, sore throat, enlarged lymph glands and fatigue. Diagnosis is made only by the laboratory examination of blood samples. Mono varies greatly in the intensity in which it effects different people. Although there is no specific remedy, rest in bed and proper diet are usually prescribed.

The cause of mononucleosis is unknown but it probably spreads by direct contact or by air-borne droplets from the nose and throat of the infected person.

Syphilis and Gonorrhea

Syphilis and gonorrhea present one of the most important and challenging of current public health problems. Since most of the spread occurs through sexual contact and since promiscuous sexual relations are responsible for the perpetuation of infection in the community, they are commonly referred to as venereal infections.

Syphilis is caused by a spirochete, and is a disease which if left untreated can result in serious illness and death. The spirochete is a very fragile organism sensitive to drying and changes in temperature and incapable of prolonged survival or multiplication outside of the human body. That is why one does not get the disease from such things as toilet seats or eating utensils. Syphilis can be spread from person to person through kissing, but most cases result from sexual intercourse.

The first sign of syphilis is the appearance of a painless ulcer or chancre at the place the germ enters the body. The sore appears about three to four weeks after exposure and may be in such a location or so slight as to go unnoticed. This sore disappears after a few weeks, and the infected person may think the organisms are gone and the illness cured. During this stage spirochetes enter the bloodstream and spread to all parts of the body.

A second warning may be a skin rash, swollen glands, sore throat, or fever. One's hair may also start to fall out in patches. These symptoms last but a few weeks in some people while in others the signs may not appear at all. Once these signs disappear the disease enters a quiet stage which may last for twenty years or more.

During the "quiet" or third stage the syphilis germs settle in one or more organs and may live there for months or years without causing symptoms. During this time they are destroying tissues. If they settle in the central nervous system they may cause insanity, blindness, deafness or the loss of use of limbs. If they settle in the heart or blood vessels they cause heart failure.

Doctors have developed ways to treat persons with syphilis. However, the responsibility of recognizing the symptoms and seeking treatment rests with the individual. It is not only a responsibility to the infected individual but also to every person he comes in contact with.

Gonorrhea is an infection of the genital and urinary tract caused by spherical bacteria. It is spread from person to person through sexual intercourse.

The symptoms of gonorrhea vary in men and women. In men the symptoms are a painful burning sensation while urinating and a discharge of pus from the penis. Because of the severe pain men usually see a doctor. In women the disease is difficult to detect since no pain is present at the early stages. Not realizing the disease, an infected woman may unknowingly spread it. If a woman has gonorrhea when her baby is born, the germs may get in the baby's eyes and cause blindness. To prevent this the baby's eyes are treated immediately after birth.

Untreated gonorrhea may result in sterility, heart disease, arthritis and even death. Modern methods of treatment provide for quick and painless cure.

Non-Infectious Diseases

Non-infectious diseases result from causes other than micro-organisms. As a matter of convenience these diseases will be discussed in four categories: deficiency diseases, functional diseases, allergies, and degenerative diseases.

Deficiency diseases are due to a lack of proper diet especially vitamins. Examples of these are scurvy, beriberi, rickets, and pellagra. Scurvy is caused by the lack of vitamin C, rickets by the lack of vitamin D, beriberi and pellagra by the lack of vitamin B complex.

Functional diseases are due to abnormalities in the functioning of body organs. Diabetes is due to a lack of insulin secretion by the pancreas which prevents the use or storage of carbohydrates. Other examples are Addison's disease, myxedema and acromegaly.

Allergies are caused by substances in the environment which are irritating to the organism. The organism reacts in various ways and disorders that range from skin rashes to asthma result.

Degenerative diseases are associated with the "wearing out" of various organs and tissues and usually take place during aging. Arthritis, hypertension, hardening of the arteries, and cataracts are examples of such diseases.

Some diseases are difficult to classify. Cancer, in some instances, is caused by viruses and would be classified as infectious. Some kinds of cancer seem to be hereditary while others act like one of the degenerative diseases. Other diseases equally hard to classify are epilepsy, kidney and heart disease.

Exercise and Rest

There is as yet no evidence that physical activity helps prevent any specific disease. However, a well-balanced program of exercise and rest will result in a state of physical fitness. This state will allow a person to develop most effectively all his potentialities - mental, moral, social and emotional, as well as physical.

Physical activity does strengthem muscles, improves posture, promotes good circulation and helps rid the body of wastes. It also helps to relieve one's stresses and tensions and provides outlets for one's extra energies.

INSTRUCTIONAL AIDS

Films:

Quarter Million Teen-Agers, Henk Newenhouse, Inc. Available from C.I.C. Film Library.

Digestion I, II, Universal Education and Visual Arts. Available from C.I.C. Film Library.

Functions of the Body, Universal Education and Visual Arts. Available from C.I.C. Film Library.

Filmstrips:

Biology Disorders in Humans:

1. Infectious Organisms
2. Transmission of Infectious Organisms
3. Body Defenses Against Infectious Organisms
4. Control of Infectious Organisms

Distributed by the Jim Handy Organization. Available from C.I.C. Film Library.

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